

# Rock Products

DEVOTED TO  
Concrete and Manufactured  
Building Materials

Vol. VIII.

CHICAGO, ILL., APRIL 22, 1909.

No. 10.

## CAROLINA PORTLAND CEMENT COMPANY

We are the largest distributors of Portland Cement, Lime Plaster, Fire-brick and General Building Material in the Southern States, and have stocks of Standard Brands at all of the Atlantic and Gulf Seaports, and at our interior mills and warehouses, for prompt and economical distribution to all Southern territory. Write for our delivered prices anywhere. Also Southern agents for the "Dehydratine's" waterproofing material. "Universal," "Acme" and "Electroid" Brands Ready Roofing. Get our prices.

Charleston, S. C. Birmingham, Ala. Atlanta, Ga. New Orleans, La.

**DEXTER** Portland Cement  
THE NEW STANDARD

Sole Agents SAMUEL H. FRENCH & CO. Philadelphia



## UNION MINING COMPANY

Manufacturers of the Celebrated

**MOUNT SAVAGE**  
FIRE BRICK  
GOVERNMENT STANDARD

DEVOTE a special department to the manufacture of Brick particularly adapted both physically and chemically to

### Lime Kiln and Cement Kiln Construction

Large stock carried. Prompt shipments made. Write for quotations on Standard and Special shapes, to

**UNION MINING CO.**,  
Mount Savage, Md.  
CAPACITY, 60,000 PER DAY.  
ESTABLISHED 1841.



BEST BELT  
FOR GRIFFIN,  
TUBE AND  
BALL MILLS

## ALMA Portland Cement

STANDARD BRAND  
OF  
MIDDLE WEST.

Specially adapted to all Reinforced Concrete and high-Class Work.

**Alma Cement Co.**  
WELLSTON, OHIO.

## Chicago Belting Co.

CHICAGO, PHILADELPHIA, PORTLAND, ORE., NEW ORLEANS.

### MAKERS OF Leather Belting

BEST BELT  
FOR  
DAMP  
PLACES



How do you figure your Lime Kiln, Rotary Cement Kiln and other furnace expenses and charges for Refractories?

By the cost of the BRICK, or by the length of the service they will give?

## Harbison-Walker Refractories Co.

FIRE CLAY  
SILICA  
MAGNESIA  
CHROME

## Brick

Are made of the highest grade raw materials under expert supervision, in modern up-to-date works, and are worth more because better than others. They last longer and are more economical. You can prove this statement in your own works by sending us a trial order. Information, records and prices on request.

**Harbison-Walker Refractories Co.**  
PITTSBURG, PA.

LARGEST  
CAPACITY

## "GOLD MEDAL" DYNAMITE

MANUFACTURED BY

Illinois Powder Mfg. Co.

Security Bldg.

Missouri

BLASTING POWDER

AND

BLASTING SUPPLIES

Quick Shipments Lowest Prices



## A PERFECT RECORD FOR TEN YEARS

IN ALL KINDS OF CONCRETE WORK

Send for 72 page Illustrated Catalog No. 25

**MARQUETTE CEMENT MANUFACTURING CO.**

Marquette Building, Chicago





## Peninsular Portland Cement

Acknowledged by competent Architects and Engineers to be unequaled for fineness, wonderful development of strength and sand carrying capacity.

**"THE BEST IS THE CHEAPEST"**

Address  
**Peninsular Portland Cement Co.**  
Jackson, Michigan

## GRAVEL WASHING PLANTS



Stone Crushing, Cement and Power Plants

**J. C. Buckbee Company, Engineers, CHICAGO**

## "LEHIGH" PORTLAND CEMENT

High Tensile Strength, Finely Ground, Light and Uniform in Color.

MANUFACTURED BY THE



**Lehigh Portland Cement Co.**

ALLEN TOWN, PA.

Western Office:  
725 Rockefeller Bldg.,  
CLEVELAND, OHIO

Write for Catalogue

Capacity, 8,000,000 Yearly.

## Red Ring Portland Cement



Manufacturers: Sales Office Liggett Bldg. St. Louis

Tell 'em you saw it in ROCK PRODUCTS.



**Strength  
Uniformity  
Satisfaction**

A Dependable Portland Cement

An Unblemished Record for  
six years speaks for itself

**Wolverine Portland Cement Company**  
Coldwater, Michigan

W. E. COBEAN, Agent, Chamber of Commerce Building, Chicago



ONE GRADE—ONE BRAND

## Alpha Portland Cement

The Recognized Standard  
American Brand

General Offices: EASTON, PA.

### SALES OFFICES:

German National Bk. Bldg., PITTSBURGH. Builders Exchange, BUFFALO  
Builders Exchange, BALTIMORE. Board of Trade Bldg., BOSTON  
Marquette Building, CHICAGO. St. Paul Bldg., NEW YORK.  
Harrison Building, PHILADELPHIA Nat'l Bank Bldg., SAVANNAH, GA.



## CHICAGO "AA"

1,000,000 Barrels Annually

**Highest Quality**

THE BEST THAT CAN BE MADE

Factory at Oglesby, near La Salle, ILL.

On C. M. & St. P. R. R.  
C. B. & Q. R. R.  
I. C. R. R.

C. R. I. & P. R. R.  
by Switch.

MANUFACTURED BY

**CHICAGO PORTLAND CEMENT CO.**

No. 108 La Salle Street, CHICAGO, ILL.

## HYDRATED PORTLAND LIME



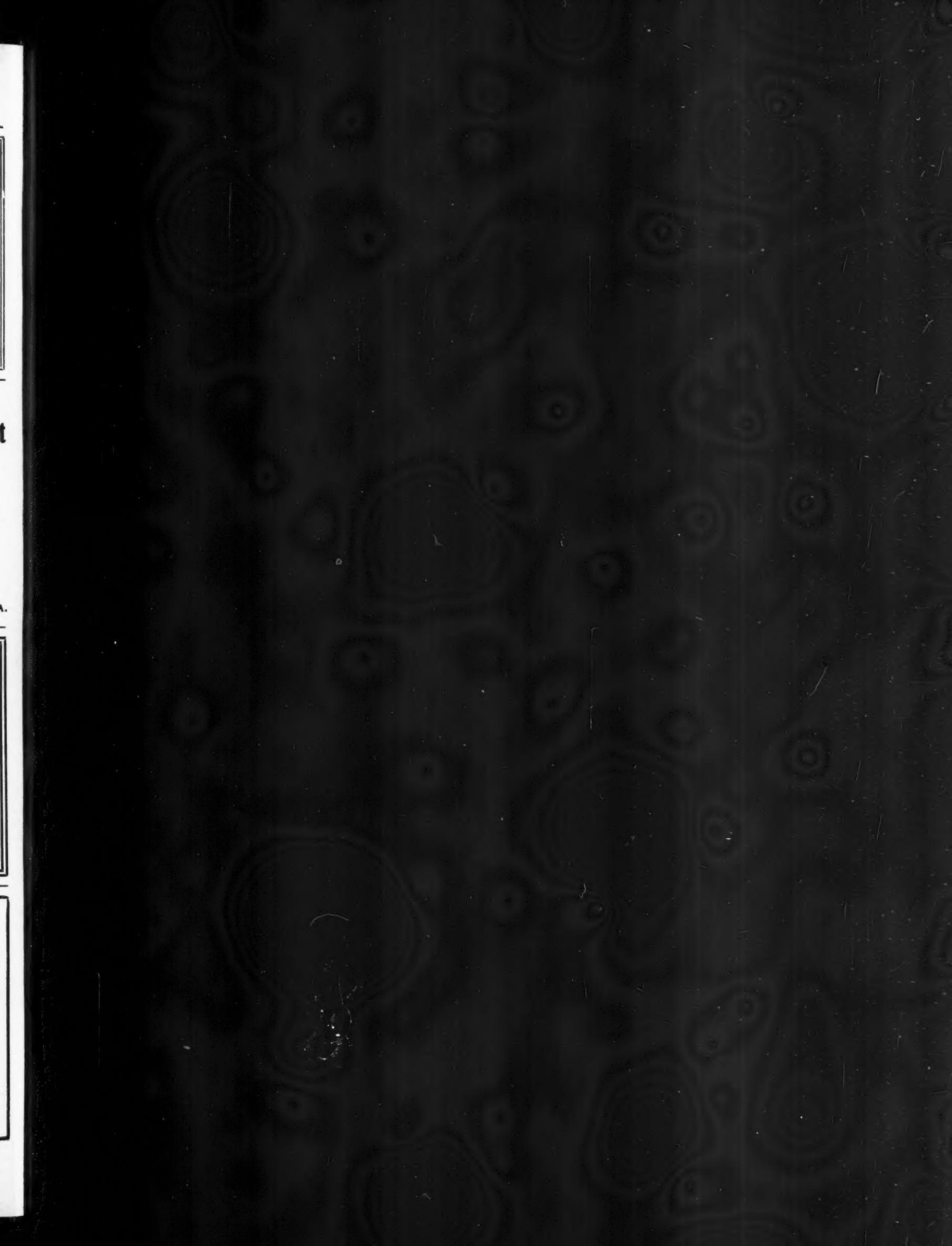
IS IDEAL FOR

**Waterproofing  
Concrete Blocks**

SAVES MONEY. TRY IT.

—FOR INFORMATION AND PRICES, WRITE—

**CHICKAMAUGA CEMENT CO.,**  
Sole Manufacturers. CHATTANOOGA, TENNESSEE





# Rock Products

DEVOTED TO  
Concrete and Manufactured  
Building Materials

Volume VIII.

CHICAGO, ILL., APRIL 22, 1909.

Number 10.

## THE STUDY OF CEMENT PLASTER EXTERIORS

Artistic Achievements in Europe Suggest Profitable Application  
of the Same Treatment of Surfaces by American Cement Users.

Perhaps the most important study yet to be undertaken by the concrete industry in this country is the matter of decorative treatment of surfaces, especially of exteriors. Not to disparage any of the work that has been done in this direction, the fact still remains that we in America are far behind our European contemporaries in this regard. There are a few creditable attempts in various places, and these have been made the most of in lectures and papers before the National Association and in the publications devoted to the industry. To a very great extent the buildings made of concrete lack the element of artistic treatment, and this is now beginning to have the effect of retarding the onward sweep of progress. Consequently, it is high time that this matter be taken up seriously, so that the finished concrete work of this country will contain attractive art features, superior to anything the world has yet seen. At the very least, with a little study and application we can approach or equal the average finish and refinement of the concrete work of France, Germany and Italy, of



VIENNA RESIDENCE—CEMENT PLASTERED.

this and the past generations. In cement we have the most flexible and versatile material that the builder ever had at his disposal. With it our engineers have accomplished astounding wonders, and this field is still open to even greater expansion in the immediate future. Our architects who appreciate the full value of art expression are deeply interested to a man, but still doubt the possibilities they have never seen worked out, and dread to open up any radical changes for which there may be found no provision in the building trades.

There is one striking deficiency to be observed in American cities, and that is the lack of expert plasterers and a dearth of knowledge upon the subject of manipulating plastic materials. When it comes to putting the least distinctive mark or contour into plaster work, our contractors at once fly about to seek

out some Italian workman to tackle the "difficult portions." Now, usually such difficult portions ought to be the average work of a good journeyman. Beyond the plane surfaces of interior walls our architects dare not specify, for fear of doubling the cost, and work in plastic materials is strictly confined to interiors. Fully 90 per cent of the active plaster contractors of this country are of the opinion that outside plastering is an impossible proposition. It is a lost art among us. Precisely the opposite condition prevails in European countries. Nearly all of the brick buildings are treated with exterior cement plaster in France, Germany and Italy. Reinforced concrete buildings are treated in this way, and some very splendid effects are secured. Our plasterers do not know enough about plastic materials to feel sure of success with the mortar they use, so all outside work must be done at "owner's risk." No more is an architect sure that he can specify an outside cement plaster that will hold—at least he has not confidence in it.

(Continued on Page 51.)



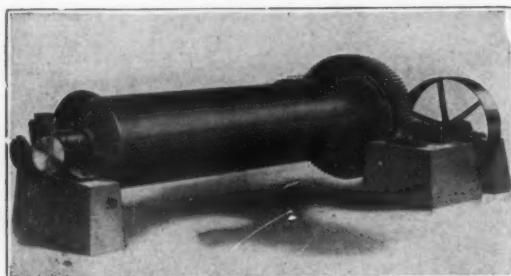
VIENNA RESIDENCE—CEMENT PLASTERED.



VIENNA RESIDENCE—CEMENT PLASTERED.



# Cement Machinery



Original designs and novel improvements so characterize our machinery as to make it the Best

## McCULLY CRUSHERS

Ten sizes and the Mammoth with 27 in., 36 in. and 42 inch openings. The most complete line.

## Tube Mills

For wet or dry grinding. Sizes 5 feet, 5 1-2 feet, 6 feet and 7 feet diameter in lengths to suit conditions.

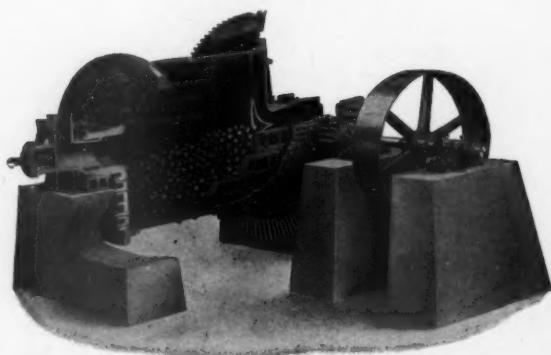


## Ball Tube Mills

Our Ball Tube Mills eliminate screens and consequent disastrous shut-downs. For preliminary grinding of both raw material and clinker, this mill is unsurpassed.

We build complete lines of  
**ROTARY KILNS,  
COOLERS,  
DRYERS**

Our engineers are at your service. Their experience will be valuable to you. Write about your requirements and ask for catalog 7R.



### Sales Offices

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Suburb of Milwaukee

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SAN FRANCISCO  
Sheldon Building  
EL PASO, TEXAS  
City National Bank Bldg.  
MEXICO CITY

# Hydrated Lime

Bulletin 29

## Think It Over— Then Actually ACT!

### Is It Good Business Policy—

- for you to continue in non-progressive ways?
- to go on year after year burning Lime and selling it on a small margin of profit when you can so easily install a Kritzer Continuous Hydrator—which would put you above lime manufacturers' competition and enable you to make BIG PROFITS?

### Why Not Make The Most Of Your Opportunities?

- Why be satisfied with "doing well enough?"
- Just because you have up to the present managed to dispose of your output, will not excuse you from being wide-awake and keeping abreast of trade conditions.
- Lime manufacturers everywhere are now realizing that not only to be up-to-date and progressive, is desirable, but that in view of changed conditions and competition—it becomes absolutely necessary to install a Hydrating Plant to meet the rapidly increasing demand for Hydrated Lime—to hold trade—and to keep their plant in full operation during dull times!
- Architects and Owners, Masons and Contractors, everywhere, are demanding and using **Hydrated Lime**—more and more—because of its proven superiority.
- And Dealers all over the country are not only becoming more eager to supply the **Increased Demand For Hydrated Lime**—because of the **Better Profits**—but they are also waking up to the other great advantages accruing from carrying stocks of **Hydrated Lime**.
- The manufacturer who neglects to install a Hydrating Plant—or at least investigate the matter—will soon discover that his "sin of omission" has been indeed costly.

### Hydrated Lime Has Come To Stay The Demand is Increasing Steadily and Rapidly

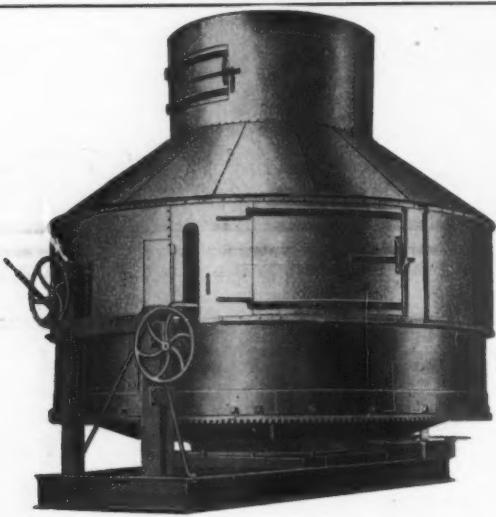
Our continuous process is the only process that has proved successful in hydrating a **High Calcium and Magnesium Lime**.

Write us today and let us send you full information regarding this subject of Hydrated Lime.

It is not only important but of vital interest to you and your business.

---

**The Kritzer Company**  
115 Adams Street, - CHICAGO, ILLINOIS



## The Clyde Hydrator

is the accepted standard of highest efficiency, economical operation, positive results and general all around serviceability in hydrating machinery

There are more of them in use than all others put together

They have proven their merit under all conditions

We will furnish full information, booklets and interesting data on your request

*“We like to answer questions”*

### CLYDE IRON WORKS

Manufacturers

**DULUTH, MINN.**  
Tell 'em you saw it in ROCK PRODUCTS.



**CEMENT PLANT  
CHANUTE, KAN.**  
Daily Capacity  
2500 Barrels

**ASH GROVE LIME &  
PORTLAND CEMENT CO.  
KANSAS CITY, MO.**

MAKER OF

**Ash Grove Portland Cement  
SUPERFINE**

**High Grade White Lime  
"THE BEST ON EARTH"**

WE FURNISH  
LIME IN "Unbustible" Steel Hoop Barrels

**LIME WORKS**  
CANARY HYDRATED LIME  
ASH GROVE LIME & PORTLAND CEMENT CO.  
KANSAS CITY, MO.

Ash Grove Galloway Everton Carthage Greenfield Mo.  
Daily Capacity 2500 Barrels

**ASH GROVE LIME & PORTLAND CEMENT CO.  
ASH GROVE  
WHITE  
LIME  
KANSAS CITY, MO.**



PENNSYLVANIA TERMINAL, New York.

McKim, Mead & White, Architects.  
Geo. A. Fuller Co., General Contractors.

### Nazareth Portland Cement

Used by National Fireproofing Co. for all Fireproofing Work

### "Limoid"

Used by Geo. A. Fuller Co. for all Stone and Brickwork

See Page No. 186. Sweet's Catalog, for  
specifications on "LIMOID."

### CHARLES WARNER COMPANY

Exclusive Sales Agent "Limoid" and Nazareth Cement.

Executive Offices, Wilmington, Del.

Land Title Building  
Philadelphia

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## George W. De Smet

SOLE DISTRIBUTOR

### Berkshire Snow White Portland Cement

Which can be used for all Outdoor and Indoor  
Work where a Permanent Pure  
White is Desired

and the Celebrated WATERPROOFING COMPOUNDS

### SYMENTREX

CONCRETE AND BRICK COATING, ANY COLOR

### DEHYDRATINE

DAMP AND WATERPROOFING PAINT

### HYDRATITE

WATERPROOF COMPOUND

This Compound makes Concrete Impervious to Water,  
Beautifies and Waterproofs Surfaces and  
Structures from Cellar to Roof.

[OFFICES:  
317 CHAMBER OF COMMERCE, Chicago, Ills.

## Medusa Water-Proof Compound

Makes all Concrete Watertight

Illustration of Oil City, Pa., concrete reservoir which is  
being water-proofed with Medusa Water-proof Compound.  
Write for pamphlet describing its use. Do not accept a



substitute, as there are many adulterated compounds on the  
market.

Samples of our Pure White Portland Cement sent on request.

### Sandusky Portland Cement Co.

SANDUSKY, OHIO

**The Ironton Portland Cement Co.**

Manufacturers of the  
Celebrated Limestone Brand of Portland Cement

Used by the Railroads in Kentucky, Ohio, West Virginia, and Virginia during the past five years.  
Cement as finely ground as any on the market.  
Guaranteed to pass all the standard specifications.

Plant located at Ironton, O., within easy access to seven States, namely, Ohio, Indiana, Kentucky, West Virginia, Virginia, Tennessee and North Carolina.  
Shipments via the N. & W. Ry., C. & O. Ry., C. H. & D. Ry., D. T. & I. Ry., or Ohio River.

Write for Prices



**The Ironton Portland Cement Co.**  
Ironton, Ohio

"THE BEST IS NONE TOO GOOD"

**HIGHEST GRADE of  
Portland Cement**

Every Barrel Absolutely Uniform.

R. R. facilities especially adapted for prompt shipments in the northwest.

Capacity 1,500,000 bbls. Yearly.

**NORTHWESTERN STATES PORTLAND CEMENT COMPANY**  
MASON CITY, IOWA.

**MEACHAM & WRIGHT COMPANY**

**CEMENT**  
CHICAGO

**CAPACITY  
700,000  
BARRELS  
ANNUALLY**

**OFFICE  
ALLENTOWN, PA.**



**STANDARD  
SPECIFICA-  
TIONS  
GUARANTEED**



**Weather-Proof Colors  
FOR  
Concrete or Stone**

A perfect filler and finish combined, which leaves the surface with a beautiful dull finish that is absolutely waterproof. Not affected by acids, alkalis, intense heat or cold. Not an oil composition. One coat all that is required to make surface absolutely impervious to moisture. Applied by dipping before block has left manufacturers' hands, or by painting or spraying after the work is erected.

Large range of colors, which can be blended, making all shades and tints.

Its water-proofing and coloring qualities enter into the stone and become a part of it.

It prevents efflorescence in concrete work.

Most inexpensive as well as most efficient water-proof coloring on the market to-day.

Samples sent free of charge upon request.

Made only by THE BILLINGS-CHAPIN Co.

**WM. S. HOTCHKISS**  
Sales Agent

1509 Manhattan Bldg.

Chicago, Ill.

Tell 'em you saw it in ROCK PRODUCTS.



**NORTHWESTERN STATES PORTLAND CEMENT COMPANY**  
MASON CITY, IOWA.

**Can Be Used With Absolute Safety**



Hundreds of users have testified to the excellent results obtained.

Manufactured and Guaranteed by

**Omega Portland Cement Company**  
Jonesville, Michigan

**THAT THE CAPILLARY ATTRACTION OF CEMENT SURFACES CAUSES INCIPIENT DISINTEGRATION**

has never been questioned. Is your building capillary positive or capillary negative? The best method of obtaining impermeability, uniformity and attractiveness is by the use of



**Bay State Brick & Cement Coating**

which fills the pores and gives a uniform color, thus doing away with the dull, monotonous blue grey of Portland Cement. THIS COATING IS FIREPROOF and bears the label of the NATIONAL BOARD OF FIRE UNDERWRITERS. Write for our book containing 100 illustrations, entitled: "How to Decorate and Protect Cement Surfaces." Free on application to

**WADSWORTH, HOWLAND & CO., Inc.**

84 Washington St.  
Boston, Mass.

Branch Office: 156 Fifth Ave.  
New York City

# "ANHYDRA"

The Perfect Waterproofing for All Kinds of Concrete Work

Thoroughly demonstrating experiments prove that this waterproofing preparation is the most economical and efficient thing of the kind ever offered on the market. It is permanent and constant in colors of the finished product, because it is made of natural materials of basic character that are unchanging. Permanent as the rock of ages. Quotations in any quantity.

**Anhydrous Pressed Stone Co.**

TELEPHONE MAIN 5278

134 Washington Street

CHICAGO, ILL.



## THE MAGIC TAMPER

A great labor-saving device which tamps the last block as solid as the first. Occupies no floor space; hangs on ceiling and can be swung to any one of the molds set within its radius. Perfectly balanced; a boy can operate it as well as a man. One horse-power will run it. All wearing parts and castings are made of open-hearth or crucible cast steel. The frame is 12 feet long, plunger 5 feet, with  $\frac{1}{4}$  inch stroke. Weighs about 165 pounds without balance weight. Three different size shoes to suit your molds given with each machine. Longer frame and plunger can be furnished. Write for circular and prices. Reliable agents wanted.

**ANDERSON MANUFACTURING CO.**  
MOORHEAD, MINNESOTA



## A Dawn of a New Prosperity

### PEIRCE CITY WHITE LIME

THE QUALITY LIME

Brings prosperity to those who buy it, because it is the whitest, purest and strongest lime in the world, and sure to give satisfaction. Our barrels are made of the best cooperage, bound by steel hoops that do not break. Write us at once for prices.

**PEIRCE CITY LIME CO.**

Peirce City, Mo.



## Five Roofings Tested.

OXFORD, PA., February 15, 1908.

GENTLEMEN:

The Amatite Roofing you advised me to try has proved to be the best roofing I have on any of my chicken houses, having tested it for two years with four other roofings. Consequently, when I was compelled to buy a new roof on my wagon house, used Amatite.

If you see fit to use this letter as a testimonial, you will be doing the chicken fanciers a great benefit.

If anyone wishes to see how the roofing lasts, I will be pleased to have them visit my farm.

Yours truly,

WILLIAM F. FOTTERALL,  
HILL CREST FARM.

This is the kind of letters which we get daily regarding Amatite.

When it was first put on the market a great many people were attracted by it, but did not wish to spend all their money in a new type of roofing, so they used some Amatite with the old-fashioned "smooth surfaced" roofings right alongside so as to get a good comparison of their durability. Now they are finding that Amatite without any painting lasts longer than other roofings that need continual painting, and they are writing in letters like the above.

Amatite has a surface of *real mineral matter* which will not rub off or wear off, as the coal tar pitch which holds it in place is a powerful adhesive.

The price of Amatite is very low. The smooth surfaced roofings sold at the price of Amatite are usually a one-ply or half-ply grade which is very flimsy and light in weight, and do not compare with Amatite, which is *five-ply*. Amatite has a double layer of Coal Tar Pitch, a double layer of wool felt, and a *real mineral surface*.

### Free Sample and Booklet

Send for Sample of Amatite and see what the mineral no-paint surface looks like. You'll then understand why it is so much better than "painted roofing."

### Barrett Manufacturing Company

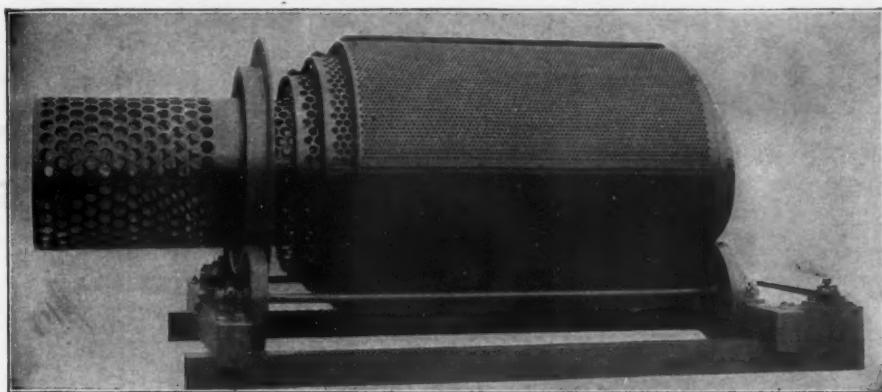
New York  
Cincinnati  
Pittsburg

Chicago  
Minneapolis  
New Orleans

Philadelphia  
Cleveland  
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Boston  
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London, Eng.

# JOHN O'LAUGHLIN'S SCREEN



The advantages of these screens are described in detail in a circular which WE WILL MAIL TO ANY ADDRESS. Mr. John O'Laughlin, the inventor, has designed many notable improvements in rock-drilling, quarrying, crushing and screening machinery, and uses these improved screens in his own crushing plants, which others have declared "to be the most perfect in existence in every detail." The O'Laughlin Screen is an important factor in the most modern and perfect stone-crushing plant.

made solely by Johnston & Chapman is the

## ONLY SCREEN

on the market for wide-awake quarry-men and miners, who want to separate crushed granite, limestone or other minerals, gravel, sand, coal or coke. It will soon earn its cost in saving of repairs, and maintenance, and reduced power, and will do more and cleaner work than any other cylindrical screen of like area. No one can afford to keep old traps in use when the O'Laughlin installed

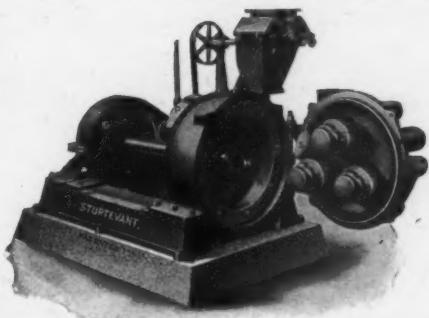
## NOW

will from the moment it starts give a better and larger product, and a big interest on your investment in continuous saving in cost of repairs, renewals, and power. For particulars, address:

### JOHNSTON & CHAPMAN CO.

1333 to 1345 Carroll Avenue, CHICAGO, ILLINOIS

Perforators of Sheet Metals, Flat, Cylindrical, and Conical Perforated Screen Plates for Quarries, Mines, Reduction Works, Mills and all Industrial Purposes.



### A RING-ROLL MILL working in connection with a NEWAYGO SCREEN

makes the simplest and most economical rock-grinding plant yet produced.

**Feed,  $1\frac{1}{2}$  inch and Finer. Product, from 16 to 100 Mesh.**

SEND FOR CATALOGUES Nos. 77 AND 79 in which is shown its superiority in

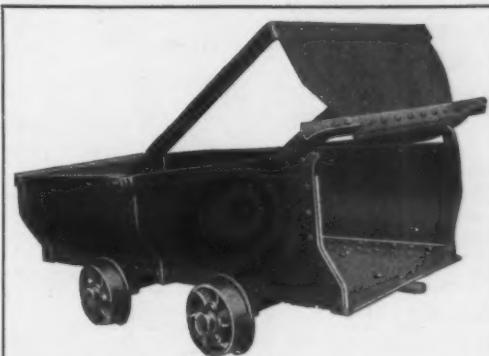
**ACCESSIBILITY  
ECONOMY  
EFFICIENCY**

**STURTEVANT**

New York  
Pittsburgh

**MILL COMPANY**  
Boston, Mass.

Chicago  
St. Louis



ALL STEEL END DUMP QUARRY CAR.

We build these cars in capacities ranging from 1 yard to 2 yards, any gauge desired.

If you are in the market for any kind of CAR, STONE SKIP, ELEVATOR, REVOLVING SCREEN let us know your wants; we can fill them.

Our catalogue No. 10-R shows a few of our supplies.

**H. B. Sackett Screen & Chute Co.**

4212-4226 State St., Chicago, Ill.

**OLDEST  
Concrete  
Roofing Tile  
Machinery**

Manufacturers in United States

**Europa and New Era  
Concrete Roofing Tile**

**Handsome, Sanitary,  
Enduring, Economical**

The crowning triumph of mechanical skill and genius

Costs less than any other Roofing Material, presents a much handsomer appearance; outwears all other Roofing.

"THE ROOFING TILE WITH ARCHITECTURAL STYLE"



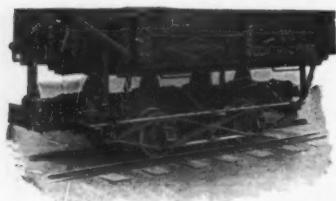
Europa and New Era Concrete Roofing Tile, Showing Different Size and Form of Tile

Made in practical sizes; all colors; not affected by heat or cold; does not absorb the carbonic acid of the atmosphere; will not radiate heat. Lowers Insurance Rates. *The Manufacturing of Concrete Roofing Tile* is one of the most *profitable industries* in the country. We Build Roofing Tile Machinery. Information cheerfully furnished. Write for catalogues.

**THE AMERICAN CEMENT ROOFING CO.**

623 Columbus Savings & Trust Building

**COLUMBUS, OHIO**



**"CONTINENTAL" DUMP CARS**

Our Dump Cars are used on most of the large rock and dirt moving operations throughout the United States and Canada.

**Continental Car and Equipment Co.**

Works: Highland Park, Louisville, Ky.

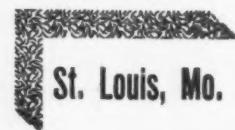
New York, 17 Battery Place

**CONTINENTAL**

**CHARLES W. GOETZ LIME & CEMENT CO.**

MANUFACTURERS OF AND DEALERS IN

**Glenwood Lime, Banner  
Brand Louisville Cement,  
Portland Cements and  
Building Materials.**



**FOWLER & PAY**

**Brown Hydraulic Lime, Austin Hydraulic  
Cement, Jasper Wall Plaster, Brick, Stone.**

CEMENT WORKS: Austin, Minn.  
PLASTER MILL: Ft. Dodge, Iowa.  
WAREHOUSE: Minnesota Transfer.

**MANKATO, MINN.**

**HIGH CALCIUM HYDRATE**

The Best for Every Purpose where Chemically Pure Lime Is the Indispensable Element

**Sand Lime Brick** Difficulties can be Simplified and Overcome  
by the use of our Correctly Hydrated Lime.

**Cement Blocks** can be made more waterproof, cheaper, and of lighter color by the use of from 20 to 40% of pure hydrate free from magnesia. This substitutes the same amount of cement and does not impair the strength of the block.

**Finishing Lime** As a finishing lime our Hydrate is unsurpassed. It is also a valuable addition to cement mortars, and for making mortar for brick and stone work.

Commercial and chemical requirements call for pure lime. We furnish a product of 98% analysis.

Kansas City

**MARBLEHEAD LIME CO.**

Chicago

# The Ohio and Western Lime Company

WORKS AT  
Huntington, Indiana  
Marion, O.  
Gibsonburg, Ohio  
Fostoria, Ohio  
Sugar Ridge, Ohio  
Tiffin, Ohio  
Genoa, Ohio  
Limestone, Ohio  
Lime City, Ohio  
Portage, Ohio  
Luckey, Ohio  
Bedford, Ind.

MANUFACTURERS OF AND WHOLESALE DEALERS IN

Ohio White Finishing Lime, Ground Lime,  
Lump Lime, Fertilizer, Hydrate Lime,  
Cement, Plaster, Hair, Etc., Etc.

Capacity  
8000 Barrels  
Per Day

MAIN OFFICE: Huntington, Ind. Branch Offices: Marion, O. and Toledo, O., 209-210 Chamber of Commerce Bldg.

# The Kelley Island Lime and Transport Co.

CLEVELAND, OHIO.

Tiger Brand White Rock Finish the best known and  
smoothest working Hydrated Lime manufactured.

WRITE FOR PRICES

THE LARGEST LIME MANUFACTURERS IN THE WORLD.

**Western Lime & Cement Co.**  
Pabst Building, Milwaukee, Wis.

Largest Manufacturers of **Magnesian White Lime** in the United States

Retailers and Wholesale Distributors of  
**LIMATE**, CEMENTS, STUCCO, LANDPLASTER, PLASTERING,  
HAIR, FIRE BRICK, CLAY PRODUCTS, ETC.

**Wisconsin White Lime**  
DAILY CAPACITY 10,000 BBLS.

LIME WORKS AT  
Oshkosh, Clifton, Grinnell, Knowles, Hayton, Brillion, Sherwood  
Sheboygan, Eden, (Marble Head,) Hamilton, Mayville, Valders  
ALLIED HOUSES AT  
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**Farnam "Cheshire" Lime Co.**

OF CHESHIRE, MASS.  
MANUFACTURERS OF THE

Celebrated Cheshire "Finishing" Lime

Well known throughout New York and the Eastern States as the finest  
finishing lime manufactured. The special feature of this lime is its quick  
and even slacking, thus preventing any cracking or checking when put  
on the wall. It is the best lime used in the country today for all

**HIGH GRADE FINISHING WORK**

Selling Department, 39 Cortlandt St., N. Y., C. J. CURTIN, Pres't.

# MITCHELL LIME

Is Chemically Pure and Practically Free from Waste

The Strongest White  
Lime on the Market.  
Used and recommended  
by Sand-Lime Brick  
Manufacturers, Chemists,  
Soap and Glue Works,  
Plasterers and Masons.

Prices Cheerfully Submitted

# Mitchell Lime Company

MITCHELL, :: :: :: INDIANA

**SAVE MONEY, TIME AND LABOR**  
 USE  
**Monarch Hydrated Lime**



If Monarch Hydrated Lime wasn't better or cheaper than lump lime nobody would buy it. As a matter of fact it is both.

Monarch Hydrated Lime costs less delivered, can be thoroughly soaked in twenty-four hours, doesn't have to be screened, carries more sand, gauges with a third less plaster, spreads further and easier and will not air slack.

That's the whole story. Now try it. Compare the cost and the results with those of ordinary lime—and we have a new customer.

Monarch Hydrated Lime is made in Carey, Ohio, where the lime-stone is just right and the shipping facilities good. Our prices will satisfy you.

We also crush stone for all purposes.

**THE**  
**National Lime & Stone Co.**  
**CAREY, OHIO.**

**Burton Powder Co.**  
 MANUFACTURERS OF  
**Good Luck Dynamite**



**Blasting Powder**

Dynamite Factory: **New Castle, Pa.** Powder Mill: **Quaker Falls, Pa.**  
 Main Office, **PITTSBURGH, PA.**  
 Western Sales Office, Chicago

**"IF IT IS**

**L I M E**

**WE MAKE IT"**

**Lump - Barreled - Hydrated - Ground**  
**STRONGEST IN OHIO.**

We are not connected with any Trust or Combination.

WRITE US  
 PHONE US

**The Scioto Lime and Stone Company, Delaware, Ohio**

**PATENT SOAPSTONE FINISH**  
 PLAIN AND IN COLORS FOR WALLS AND CEILINGS

**Patent Soapstone Mortar**

Prepared in any Color for Laying Pressed and Enamelled Brick, Stone  
 Fronts, Terra Cotta, Chimneys, Fire Places, Etc.

The Dodge Blackboard Material or Artificial Slate.

The Potter Blackboard Material.

SOAPSTONE MICA. CONCRETE DRESSING,  
 CRUSHED, GROUND AND BOLTED SOAPSTONE.

AMERICAN SOAPSTONE FINISH CO  
 DODGE, Proprietor  
 CHESTER DEPOT, VT

Tell 'em you saw it in ROCK PRODUCTS.

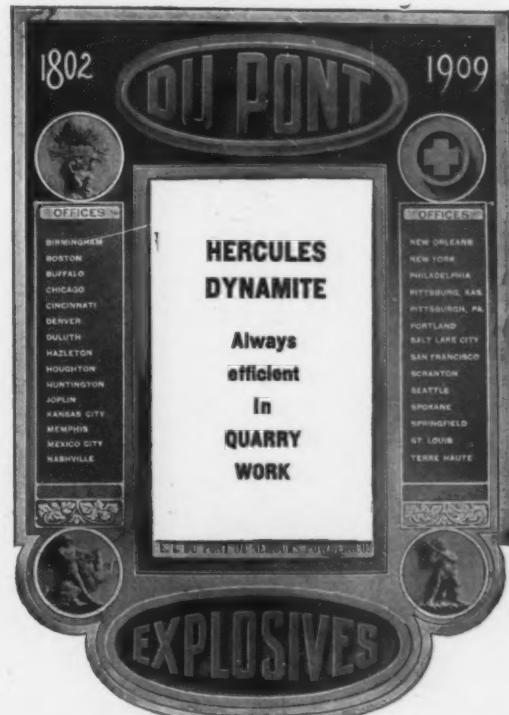
**NEW JERSEY LIME CO.**



**HAMBURG, N.J.** MANUFACTURERS OF **MAFEE, N.J.**

**BUILDERS' LIME** **CHEMICAL LIME**  
**HYDRATED LIME**

**HAMBURG, N.J.**



# AETNA DYNAMITE

**The Standard Explosive  
Always Full Strength  
Always the Same**

**Send for new 66 page Blasting Manual**

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**THE AETNA POWDER COMPANY**  
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# The Bradley Producer

## Gas Process for Burning Lime.

Four and three quarter pounds of lime to one pound of coal on a large output is now being secured every day.

**Does that look like economy to you?**

—————RESULTS GUARANTEED—————

**Duff Patents Company** **Frick Building**  
**Pittsburg, Pa.**

HIGH GRADE

## FIRE BRICK

For Cement Works, Lime Kilns, Cupolas, Steel and Iron Works of every description. :: :: ::

**Louisville Fire Brick Works,**

K. B. GRAHN, Prop.,  
Highland Park, Ky., P. O.



**The Buckeye Fire Clay Co.**

Manufacturers of  
Sewer Pipe, Flue Linings, Chimney  
Tops, Fire Brick, Grate Tile, Ground  
Fire Clay, Wall Coping, Etc.

UHRICHSVILLE, . . . OHIO

HENRY T. PEIRCE Pres.

HARRY J. WALTON, Sec'y and Treas.

## THE PEIRCE-WALTON CO.

Contractors'  
Complete Equipments

1122 Land Title Building

Philadelphia, Penn., U.S.A.

The Designing and Equipping of  
**Concrete Mixing and Rock Crushing Plants**

Our Specialty. Tell Us Your Needs.

## Buffalo Brick Clamp

### Will Pay for Itself

In three days by handling brick over the old method.

By saving twenty-five per cent, time unloading a car of brick.

By not making a mistake in the count, as they can be adjusted from four paving brick to twelve regular.



THE ONLY TOOL TO HANDLE BRICK

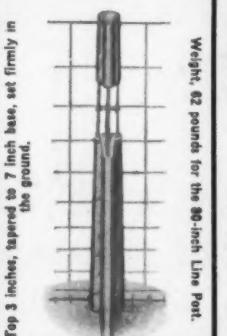
Manufactured by  
**Mostberger-Langner Iron Co.**  
876-890 S. Division St., Buffalo, N. Y.

By saving from 50c to \$1.00 on every thousand pressed brick by not chipping.

Pavers save thirty-three per cent, by carrying bricks from curb to paver instead of wheeling them.

Takes from four paving brick to twelve regular.

## McElroy Post



## YOU

Will never look "So Satisfied" as when you remove a post from

### MY NEW MOLD

A little of the inside detail is here shown by removing the concrete from a green post so that one of the stays is exposed as well as the heavy lateral rods.

**The McElroy Post and Pole Co.**  
CEDAR RAPIDS, IOWA

## Most Manufacturers



Never ask for competitive bids on their gear requirements. They order Nuttall cut or planed gears, and get them promptly, thus saving time and money.

If in a hurry, wire us.

R. D. NUTTALL COMPANY  
PITTSBURG, PA.

## THE FULLER ENGINEERING CO.

DESIGNING AND CONSTRUCTING ENGINEERS  
ANALYTICAL CHEMISTS

CEMENT MILLS A SPECIALTY

OFFICES: ALLENTOWN NAT. BANK BLDG. ALLENTOWN, PA

## MACHINERY FOR Industrial Plants



We manufacture machinery for transmitting power, and for elevating and conveying materials in and about cement plants, rock crushing plants, lime plants, mortar works, plaster works, and other industries.

We manufacture screw conveyors, belt conveyors, and all sorts of chain and cable conveyors, for handling rock, lime, sand, etc.

We manufacture elevators, also, for handling the same kinds of material.

Our lines include shafting, couplings, bearings, collars, pulleys, gears, rope sheaves, sprocket wheels, elevator buckets and bolts, steel elevator casings, etc.

We have our own foundry, sheet metal department and machine shop. We employ first-class help in all departments and use high-grade materials.

When you are in need of anything in our line, try us.

Catalog No. 28.

## H. W. Caldwell & Son Co.

17th St. and Western Ave., Chicago

Fulton Bldg., Hudson Terminal, No. 50 Church St.,  
NEW YORK CITY

Tell 'em you saw it in ROCK PRODUCTS.

## Do You Have Cars to Haul?

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Special Designs for Special Purposes

Any Size, Any Gauge, Any Weight

Write for Prices and Particulars

**DAVENPORT LOCOMOTIVE WORKS**  
DAVENPORT, IOWA

## Limestone and Shale

FOR MANUFACTURE OF

## Portland Cement

ON THE

## Illinois Central Railroad

IN THE

WEST AND SOUTH

## Coal, Water and Good Labor

For Full Particulars Address

**J. C. CLAIR, Industrial Commissioner**

I. C. R. R. CO.

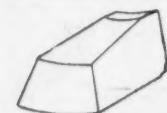
No. 1 PARK ROW, CHICAGO

# ROTARY CEMENT LINERS.



## LIME KILN LININGS.

IRONTON CROWN.



GROUND CLAY  
FOR  
WALL PLASTER  
AND  
BOILER SETTINGS

DIRECT HEAT

# DRYERS

FOR

BANK SAND  
GLASS SAND  
ROCK, CLAY  
COAL, ETC.

All Mineral, Animal and Vegetable Matter.

We have equipped the largest plants in existence and our dryers are operating in all parts of the world. Write for list of installations and catalogue S. C.

## American Process Company

68 William Street,

NEW YORK CITY

RUGGLES - COLES

# DRYERS

RUGGLES-COLES ENGINEERING CO.

NEW YORK

CHICAGO

## The Cummer Continuous Gypsum Calcining Process

See Other Advertisements Page 80

THE F. D. CUMMER  
& SON CO.  
Cleveland, Ohio

Seven plants in successful operation producing about 1,500 tons per day.

## THE WINANT COOPERAGE CO.

Staves, Hoops and Heading for Lime,  
Cement and Plaster Barrels

MILLS:  
Pennsylvania New York Maine  
Virginia Ohio

190 CEDAR STREET  
NEW YORK, N. Y.

Send a DOLLAR BILL for a Years  
Subscription to

## ROCK PRODUCTS

IT PAYS BIG DIVIDENDS

### For Immediate Shipment

Austin Gyratory Crushers.  
Austin, Western and Aurora Jaw  
Crushers.  
Quarry Pumps, Steam Drills.  
Sterling Wheel Barrows, Concrete  
Mixers.  
A lot of bargains in rebuilt crushers,  
all sizes and kinds.

Write for prices and catalogues.

The Williams Contractors Supply Co.  
COLUMBUS, OHIO

### Farrington Expansion Bolts



The most secure fastening in concrete as well as in stone.  
Send for Samples.  
H. Farrington, 45 Broadway, New York

## C. K. WILLIAMS & CO.

EASTON, PA.

The Largest Manufacturers in the U. S.

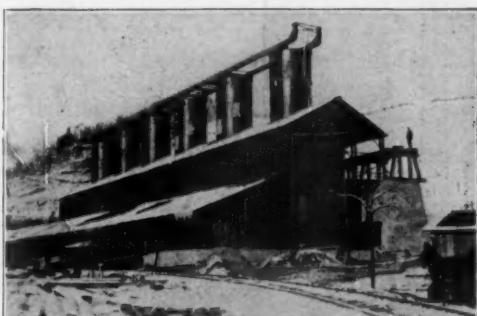
### BRICK AND MORTAR

## COLORING

OF ALL SHADES

CORRESPONDENCE SOLICITED. SAMPLES AND ESTIMATES  
CHEERFULLY FURNISHED ON APPLICATION.

Tell 'em you saw it in ROCK PRODUCTS.



Lime Kilns and Plant of Blair Limestone Co.,  
Canoe Creek, Pa.

Designed by

Henry S. Spackman Engineering  
Company

42 N. 16th Street

Philadelphia, Pa.

# ROCK PRODUCTS

ESTABLISHED IN LOUISVILLE, KY., 1902.

DEVOTED TO CONCRETE AND MANUFACTURED BUILDING MATERIALS.

Volume VIII.

CHICAGO, APRIL 22, 1909.

Number 10.

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Communications on subjects of interest to any branch of the stone industry are solicited, and will be paid for if available.

Every reader is invited to make the office of Rock Products his headquarters while in Chicago. Editorial and advertising copy should reach this office at least five days preceding publication date.

## TERMS OF ANNUAL SUBSCRIPTION.

In the United States and Possessions and Mexico..... \$1.00  
In the Dominion of Canada and all Countries in the Postal Union..... 1.50  
Subscriptions are payable in advance, and in default of written orders to the contrary, are continued at our option.  
Advertising rates furnished on application.

Entered as second-class matter July 2, 1907, at the Postoffice at Chicago, Illinois, under Act of March 3, 1879

Don't forget there is sure to be a car shortage, and it will begin to pinch before September 1.

The National Lime Manufacturers' Association will hold a summer meeting this year. The announcement is given on another page.

Plastering contractors are learning the benefits of coöperation. Local associations are being formed in a number of the larger cities.

Every extensive building material establishment should have a catalog divided into the several departments of goods handled. It is worth the effort as well as the cost.

Since teaming forms such an important part of the supply man's operations, why don't he get busy with the development of better wagons and cheaper power than the venerable horse?

That o'er worn maxim "Competition is the life of trade" has no place in modern business life. It has given way to "Intelligent coöperation is the surest path to success." Therefore the usefulness of trade associations.

It has been predicted that this will be the banner year for the sales of Portland cement as to quantity. While facts so far developed do not bear out such a statement, it is likely that there are some surprises in store for the doubters.

Building statistics indicate that the city of Chicago is growing faster than any other American community. The permits for apartment buildings and residences constitute a rushing business at the present time. The record of last year in these lines was the largest ever.

Some of the plaster manufacturers of this country don't understand the meaning or the uses of the modern idea of coöperation. Without calling any names, it really looks very foolish for one man to knife all of his brethren in the same line, when nobody thanks him for it.

The builders' supply retailers are somewhere near the most wide-awake classification of American business men. At the executive committee meeting of the National Association, held in Chicago the present week, every member of the committee was in attendance. The association is conducting a broad-gauge aggressive campaign, which every retailer in the United States should support.

Keep posted on the fire losses of your own town, Mr. Retailer of Supplies. This will help you in recommending the goods you handle with the best possible argument to prospective builders. Such customers will be thankful for the tip, especially those who have had fire experience.

Generally speaking, big building propositions are being held up and postponed. Great engineering undertakings are in the same condition. This will all be changed just as soon as the political manipulation of business down at Washington is brought to a close. On the other hand, the little residence jobs, flat buildings and public improvements in the little towns are making a very large volume of business in material lines. It is the millions of little customers that count for profit in the long run.

Sewer pipe and all other vitrified goods continue to have a black eye because there is no profit in it for anybody concerned. If it costs more to dig clay and burn it into sewer pipe now than it did three years ago, there is no good reason for guarding that fact like a secret. Such goods are indispensable and both the man who makes them and the man who handles and delivers them is entitled to a fair business profit. There will never be any marked improvement until the business can be conducted upon a more liberal basis, and this, in the last analysis, means a higher price to the consumer, who gets the use and value of the goods.

Crushed rock, in point of volume and usefulness has grown to be the most important quarry product. The demands of the rapidly growing concrete industry has filled out the hand of the crusher man to a great extent, where ballast and macadam specifications were formerly the sole requirement to be met. It now develops that new side lines are being opened for the crusher operator, where he can use up his dust and waste, so that the biggest profit of his establishment can be made out of the by-products of the crusher plant. The end is not yet in sight. The simple business of crushing rock has in the near future possibilities of development that are second to that of no other industry where the man behind the gun is enterprising enough to look for twentieth century opportunities in the material markets.

Only when one contemplates that more than 75 per cent of the buildings in American cities, and more than 90 per cent of the buildings in rural districts, in this country are constructed of wood, the field for fireproof and high class fire resisting materials can be appreciated. Within the last few years, and particularly in the present decade, an active study of this subject has been generally begun, and naturally the campaign of education has only reached a small portion of the building public. Previously used systems of construction have been changed and modified, and are rapidly passing to oblivion. The architect observes the handwriting on the wall and is conservatively adopting the new fireproof and fire resisting materials just as fast as the investor requires him to do so and no more. He sees familiar materials and old methods and systems thrust aside, and is not inclined to work out new principles, made necessary by better materials, that come into the market, except insofar as the investor insists. It is up to the designer of buildings to investigate modern materials and the new systems of construction that are coming to the front with such an amount of merit that it is impossible to pass them by without consideration. The time is not far distant when every builder will demand that every part of the structure in which he places his investment shall at least be of non-inflammable material. The architects can still take the lead in this progressive feature of modern and future construction; and, if they do not, it will be thrust upon them because the needless waste of fire losses and consequent taxes of insurance premiums is already too well understood to be longer neglected.

## ROCK PRODUCTS



## Cheer Up.

Country going to pieces?  
Not on your life! She's there,  
With the sunlight o'er her streaming,  
And a posy in her hair!  
Her hand on the engine's throttle,  
Her banner above her brow;  
And she never has done much better  
Than she's doing now!

Country going to thunder?  
Everything wrong? Get out!  
She never was feeling finer,  
And she knows what she's about!  
Her plowshare's waiting and ready;  
Her millwheels—hear them roar!  
And she's making a home for the people,  
The rich and poor!

Nothing wrong with the country,  
Doing her best—and, say!  
Her worst is a darn sight better  
Than any one's best—hurray!  
Country going to pieces?  
There's another think coming to you;  
Her red cheeks never looked sweater,  
Her eyes more blue!

What if they do talk nonsense,  
And Congress will waste its time;  
Congress is not the country,  
Our glorious, and sublime.  
Oh, the sunbeams crown her splendor,  
And her feet are on the rose,  
And the hearts of the brave attend her,  
Where'er she goes!

Don't you bother about her,  
She's climbing the hills all right,  
With a dream in her eyes of glory,  
A smile on her lips of light.  
Country's going to pieces?  
Not on your life! She's fine,  
With the folds of her flag around her,  
Its stars ashine! —Baltimore Sun.

W. H. Loy, of Findlay, O., the newly elected secretary of the Ohio State Stone Club, has taken up an active canvass to complete the membership of that altogether commendable organization. Nothing less than the total representation of the rock crushing interests of Ohio is going to satisfy Secretary Loy, so the shortest, easiest and sweetest way is to sign a membership application and return it with a check. Without calling any names, this means about six fellows who know they ought to have joined at the start. Come in now, while the water is fine.

Fred G. Langner, "that genial iron specialty man," was a recent Chicago visitor. His concern is the Mostberger-Langner Iron Company, of Buffalo, N. Y., but Fred is known to the trade far and near. He says, "judging from the number of Buffalo brick clamps that are going out, there should be no flies on the amount of building that is being done at the present time."

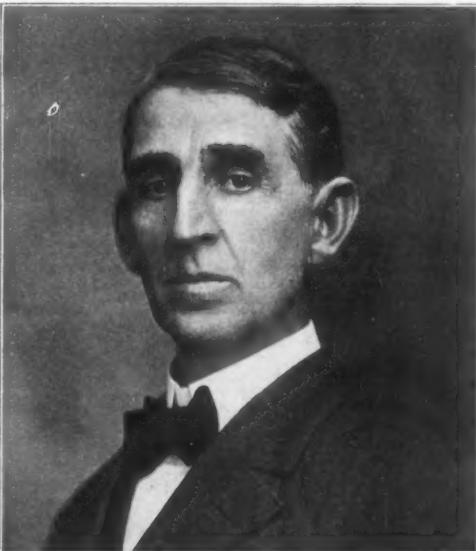
Frank Hunter, of the Columbus Builders' Supply Company, who is also the president of the Ohio State Association, recently pointed ROCK PRODUCTS to a good, practical lesson. An extensive wholesale firm in Columbus were considering the matter of building a new factory. There was enough advice concentrated about the management to constitute the basis for a public library if it had been in book form. Mr. Hunter's well-known good judgment was the occasion of getting himself called in, and he promptly expressed himself as favoring concrete construction for such a building as was contemplated. He soon was caught in the midst of the crossfire of several architects, all of whom were predisposed to the use of "slow burning mill construction," whatever that may be. Mr. Hunter's clean-cut statement of the diminished fire risk was being favorably considered, when the old factory took fire and burned down in a few hours. It had been built about twelve years ago, and was of the alleged "slow burning type." That day a decision was reached and Frank Hunter's judgment was substantially vindicated with

an order for 12,000 barrels of Atlas. Dan McGrath, the reliable general contractor of Columbus, has the job in charge, and that concrete framed factory is now rising to the second floor.

Harry S. Doyle, chief engineer of the reinforced concrete department of the American Steel and Wire Company, Chicago, says of his famous triangle mesh fabric: "It is something to have the simplest, cheapest and safest reinforcement for concrete work. It is safest because there is no way to leave any of the specified steel out of the job by poor inspection or otherwise. In every case they have to use it all or none, because it is all joined together."

The genial, smiling countenance of A. H. Craney, Jr., of St. Louis, loomed up in Chicago last week. Mr. Craney is proud of the fact that the new St. Louis Baseball Park grandstand was built of Red Ring Portland cement. It is one of the finest in the country and baseball magnates have been flocking to St. Louis to see it. Mr. Craney radiates optimism and predicts that the coming season will be a record-breaker.

Walter T. Schueffner has been appointed special envoy to the contracting trade in the interests of the Wisconsin Lime and Cement Company, to sell the structural steel specialties made by the Mostberger-Langner Iron Company, of Buffalo. Walter has some attractive offerings in hollow steel columns, which give to basements of flat buildings a neatness that cannot be had without them.



W. H. LOY, SECRETARY OHIO STATE STONE CLUB, FINDLAY, O.

B. F. Marsh, Worcester, Mass., the state vice-president of the National Builders' Supply Association, recently remarked: "Trade for the past winter has been very quiet, but looks good to me just now; in fact, I am always looking for sunshine, no matter how dark and dull the day. I feel as though tomorrow would be the most pleasant day that I have ever known." Now, our observation is that he has the surest way of finding those kind of days.

B. F. Affleck, the dignified sales manager of the Universal Portland Cement Company, says there is a whole lot of engineering work to come out yet.

The United Kansas Portland Cement Company is issuing gratis a line of very useful and practical literature on the uses of cement. It is sent gratis to retailers and others interested, and well worth sending for. B. E. Allison, the sales manager of the company, who measures something in a literary sense, is responsible, no doubt.

The Brokensword Stone Company, of Bucyrus, O., takes the lead in the line of rock crushing by sending its trade a full line of technical information on its products in neat pamphlet form.

"Oh You" Miracle spent a day in Chicago recently and was so busy that he did not get around to see many of his friends. Mr. Miracle says that it will take the Miracle Pressed Stone Company three months to catch up on the orders for machinery and equipment now booked.

## INTERNAL WATERWAYS.

The Expedient Settlement of This Important Economic Question Most Vital to Equipment and Material Men.

The improvement of our internal waterways seems to be stalled again in the slough of political controversy. The connecting link in the Lakes-to-the-Gulf route, lying entirely within the state of Illinois, is in no better condition than other improvements that are directly in the control of the national government. This in spite of the fact that the sovereigns of the state of Illinois have pledged their endorsement and support to the improvement of internal waterways by a voluntary contribution of \$20,000,000. While it is well to begin such a large undertaking with due preparation, proper caution, and conservatism, why should all action be suspended in the main issue while politicians wrangle over the possible developments of shipbuilding? The commerce of the world is today carried in bottoms of less than fourteen feet draft.

If such a depth for all the waterway improvements were promptly adopted, the ship builders would at once accommodate their designs to it. To people who know nothing of marine affairs, such questions are naturally mysterious, but the calculation of draft ships by their tonnage is so well known that it is really simple. The total tonnage now afloat and in transit by railroad and every other conveyance known to man, could be put into cargoes on the Mississippi between New Orleans and Cairo with plenty of room for handling the ships and none of them drawing more than fourteen feet of water. The agitation of campaigns to consider greater or lesser depths of water for the adopted minimum of our waterways can be nothing less than an effort to check and delay the undertaking.

There are, unfortunately, numerous private interests opposed to the improvement of the waterways. The railroad corporations, for instance, are blinded by what they imagine to be their best interests to check if possible any efficient and free route to the sea. Their whole policy in this matter is a mistaken one, because the first influence upon commerce that the improved waterways will inaugurate, gives the railroads a direct profit. It will almost immediately relieve the railroads of the unprofitable part of their tonnage, thereby enabling them to earn larger dividends upon a lesser volume of business, with fewer trains and the consequent lower risk and cost of doing business. It will at once give greater efficiency to the railroads without cost to them, and so multiply the volume of traffic eventually by moving the products that are now wasted, that with the great improvement in good working order there will still be all the room for future expansion in the railroad business to satisfy the most ambitious.

In the next month or six weeks the annual flood period of the internal rivers of the United States will recur. Since there have been no sane measures taken to avoid the usual losses, it is certain that hundreds of millions of wealth will be wiped out and thousands of people will pay tribute to the inertia of public officials charged with the responsibility of their protection. When one destroys an ant hill, the ants immediately set about repairing the damage, and that is exactly what American citizens have been doing for a century. The first question is, are we men or are we insects?

If heavy flood damages only came once in a long period and the cause attributable to accident there might be some excuse for men to treat our internal floods as they do. But the recurrence of flood damages comes like a regular program number every spring and the causes are well known. Truly in this matter we are men acting in imitation of the ant, busy enough to be sure, but working with the brains of insects.

The waste waters of our annual floods if conserved would be worth as much money to commerce in dollars as is the wheat crop, the coal output, the steel production, and possibly all of them together. It is strange, indeed, that an enlightened and progressive people like we imagine ourselves to be should allow such waste to sweep by with unerring regularity without stretching a hand out to save some of it at least.

The study of hydraulics was the first science to be studied and perfected by man. The conservation of the flood waters of the River Nile, the root upon which sprang up the first great empire of history, Egypt passed into oblivion as a world influence with the destruction of her storage basins, dams, aqueducts and other flood controlling improvements. The Babylonian empire took the lesson from Egypt and built its wealth and power by controlling and using the Euphrates. The incalculable resources of China today depends directly upon her internal rivers.

Germany has taken the cue from these and other lessons of history, and the improvements of her internal waterways, which have only been in progress a few years, are fast giving to her the supremacy of the world's commerce. This condition of the hour is practically admitted by the English admiralty. It is now recognized by the world powers that seaboard commercial advantages must be carried to the interior of continents to secure the volume of supplies needed in the traffic of this age.

Neither the Nile nor the Euphrates, and no river in China or Germany, can compare with our own Mississippi, Ohio, Illinois and Missouri, now idly wasting themselves into the Gulf, but repeating an unmistakable promise with every flood season, to give the empire the commerce of the world to this nation merely for the price of the harness.

The conservation of our internal waterways is not a political question, but an economic one. The cost of the improvements can be set down as an investment. Without taking into the count any advantages of navigation and transportation, the saving of flood losses, and the constant revenue of water powers created by controlling the flood waters of our rivers, will earn a dividend of 50 to 100 per cent with clock-work regularity.

The resumption of navigation upon our internal rivers today depends more upon the lack of economical harbor equipment than to anything else. Time was that a wagonload of freight was a considerable item. We are just learning that even the largest possible carload is not a great deal. When it comes to handling goods upon the scale of cargo units we waste time and money with ineffectual equipment. The harbors of our internal rivers must be equipped with hoists and travelers that will handle tons of freight in the same time and at the same cost as a case of eggs can be carried ashore today upon a man's shoulder. Such equipment is available at one hundred different shops in this country. In fact, a large part of the German harbors are provided with such equipment from these identical shops. If a few of the larger harbors were equipped in this way to economically handle the freight there would be no hesitation about the resumption of navigation in our internal rivers even without very much improvement. St. Louis, Memphis, Louisville, Cincinnati and Pittsburgh harbors have opportunities right now beyond any comparison with the interior cities of Germany, which are reaping the benefits of modern engineering and applied science.

When you read of the floods' damage in the next few days just contemplate the need of supporting the waterways improvement upon an economic basis, and resolve to get busy so as to get a piece. If ever there was a movement directly beneficial to material men it is the internal waterways.

A delegation of business men came into ROCK PRODUCTS' sanctum the other day and they were received with open arms. Among them were: D. E. Binns, on his way to Kansas City; A. H. Gallagher and Frank Culver, of the Ohio-Binns Retarder Company, of Port Clinton, O. They had some very interesting information as to the big doings in Toledo next summer when the yacht races are on. Our sailing partners from Ohio brought a fresh gale with them and business began to pick up around ROCK PRODUCTS' office right away.

Joseph Kelley, the expert contractor, of St. Louis, and Mr. Skranka, of the Skranka Construction Company, were in Chicago the other day. The latter gentleman purchased a No. 5 Austin crusher, and, by the way, remarked this was the fifteenth Austin that was working in their quarries.

O. J. Hill, of the Ash Grove Lime and Portland Cement Company, of Kansas City, is expected home after a winter's rest in California.

C. Webber Jones, of Samuel French & Co., of Philadelphia, who has been managing the cement department of this company for a number of years and selling the product of the Dexter Portland Cement Company, has severed his connection with that company and expects to start in business for himself. It has not yet been reported what the new line will be.

E. F. Lowrey, of the Reinforced Concrete Pipe Company, Jackson, Mich., was in Chicago recently. He has closed a large contract for concrete sewer pipe in one of the suburbs.

F. H. Anderson, of the A. & S. Wilson Company, Pittsburgh, Pa., has been in Chicago for a few days and secured for his company the contract for the eight-story addition to the Republic Building, at Adams and State Streets. It is for \$500,000 and will have an exterior of enameled brick and terra cotta.

### Concrete Lamp Posts.

Concrete lamp posts are being experimented with in the District of Columbia. Several of these have been erected in Massachusetts Avenue and observations will be made to determine their permanency, efficiency, and lasting qualities. The posts are modeled in the shape of a Grecian column with a scroll and other ornamentation at the top. They support each a round globe of frosted glass, in which there is a large incandescent electric light.

H. H. Brown, recently assistant sales manager for the Charles H. Moore Oil Company, Cincinnati, O., has been made manager of the Tiona Refining Company, of Indianapolis, Ind.

Charles F. Town, the genial representative of the Marblecrete Products Company, of Akron, N. Y., passed through Chicago recently on his return from an extended trip through the west as far as Denver. He reports a successful trip and business prosperous for "marblecrete," which is no doubt due as much to Mr. Town's winning personality as to the merits of the product which he represents.

The William G. Hartranft Cement Company, Ltd., Bank of Ottawa Building, Montreal, Que., is sending out to trade a unique blotter with a clipping from the *Montreal Herald*, as follows:

The Vulcan Portland Cement Company has just been awarded a big contract to supply about 46,000 barrels of Vulcan cement to the Department of Railways and Canals, for use on the Lachine and Cornwall canals, here and at Cornwall. This is the third contract in succession awarded to this company, and the cement has in each instance given complete satisfaction.

The Vulcan Company has one of the largest, if not the largest, plant in Canada, and, according to the



### Those Foolish Questions.

"Phwat ye's doin', Moike?"  
"Makin' mud pies, to be sure."  
"Oi thought ye's was combing yer hair."

opinion of experts, there is probably no plant on the continent quite so modern and complete.

Its sales department says that, although the Vulcan cement has gone into all kinds of the most important work, where it has to stand very severe tests, there has never been a single barrel rejected on any work, for any cause whatever.

Chemists and engineers of high standing only are employed, for the company's long experience in the cement business has taught it that a little extra expense incurred in the careful manufacture of its product is not money thrown away, for engineers, architects, etc., invariably prefer to recommend a brand which is known to be reliable.

A very unique feature about the Vulcan plant is its immense storage capacity. It can store nearly a half million barrels of cement at one time. This storage capacity is greater than that of most mills having three or four times the Vulcan Company's output. The stockhouses are divided into a great number of small bins, which bins are filled separately with cement which is tested regularly at certain intervals. In this manner it is possible to detect immediately any irregularity or variation in the product, and to check same before large quantities have become affected.

It is said that this exceptionally large storage capacity has given the Vulcan brand preference over others in many instances, especially where orders were large, and had to be executed in a hurry.

Charles C. Kritzer, the lime hydrating expert, is visiting with the lime producers of the Southwest. It is sure to mean another mill to make hydrate.

Charles Sharp, of Youngstown, O., the expert mixer of plaster, entered a collie at the dog show at Youngstown and won the second prize. He is thinking about running for mayor now.

The Mackay Wall Plaster Company, Great Falls, Mont., in a recent letter, say: "The copy of ROCK PRODUCTS which I now hold in my hand is one of the finest trade publications I have seen in a considerable time."

### Big Gain in Building.

Building operations are wonderfully active in all parts of the country and show an enormous increase over the corresponding period a year ago. Permits were taken out in fifty leading cities in March, according to official reports to *Construction News*, for the construction of 15,351 buildings, involving a total cost of \$63,972,934, against 13,111 buildings, aggregating in cost \$31,909,172 for the corresponding month a year ago, an increase of 2,240 buildings and \$32,063,742. The compelling conclusion, after a glance at the figures, is the remarkable activity in the big cities and the marvelous recuperative power of this country. A year ago the country was still feeling the effects of the blow which came with the panic of October, 1907, while a glance at the totals shows distinctly that this country, in so far as building construction is concerned, has not only returned to a normal condition, but is even surpassing the high records previously established, the best and most convenient illustration being the record of building in Chicago for March, which was far ahead of any previous corresponding month in the history of the city. The figures, in detail, are as follows:

City	No. of Bldgs. Cost, 1909	No. of Bldgs. Cost, 1908	Gain.
New York	425 \$22,261,150	178 \$2,699,909	734
Chicago	1,254 8,145,800	1,104 4,829,300	69
Philadelphia	1,848 3,857,840	1,259 2,489,940	55
San Francisco	3,336,199	...	2,676,909
St. Louis	1,143 2,675,087	946 1,964,490	36
Washington	474 1,440,861	531 1,190,694	21
Newark	256 1,278,025	212 499,757	156
Spokane	515 1,177,295	346 587,880	100
Cleveland	741 1,165,983	738 745,985	56
Los Angeles	788 1,154,726	755 1,005,463	15
Milwaukee	469 1,073,746	459 743,586	44
Pittsburg	404 1,048,138	389 567,830	85
Denver	335 1,040,750	312 901,850	15
Detroit	374 934,000	321 667,450	39
Portland	449 885,385	544 851,845	4
Minneapolis	403 752,320	435 413,200	82
St. Paul	319 772,998	209 370,890	108
Indianapolis	515 693,275	466 927,389	125
Buffalo	306 664,000	216 440,000	51
Baltimore	290 732,290	243 409,356	79
Columbus	237 636,768	203 302,400	111
Omaha	149 611,245	120 221,620	175
Rochester	249 596,930	118 333,098	79
Salt Lake City	108 530,000	141 399,331	33
Atlanta	472 480,428	403 284,737	69
Dallas	163 424,014	130 109,702	386
Oakland	279 395,650	288 469,514	116
Memphis	247 376,789	241 375,584	...
New Orleans	314 341,559	...	1,833,775
Tacoma	216 295,132	218 290,191	2
Worcester	111 285,240	63 65,865	333
San Antonio	304 279,585	278 142,390	96
Paterson	101 265,274	49 322,499	118
Toledo	132 261,490	73 131,490	99
Sacramento	8 249,886	7 3,550	6,939
Grand Rapids	148 201,000	84 90,795	121
South Bend	37 290,865	26 37,650	434
Harrisburg	34 188,225	24 69,450	171
Lincoln	83 172,100	76 161,837	6
Pueblo	18 153,365	26 20,225	658
Birmingham	140 158,847	106 128,692	23
Wilkes-Barre	59 145,593	55 92,010	58
San Diego	68 109,865	119 175,205	137
Cedar Rapids	31 106,000	15 75,150	41
San Jose	47 80,526	45 87,240	18
Stockton	20 39,220	34 53,443	27
Davenport	15 25,240	17 45,500	145
Terre Haute	76 59,515	85 135,620	56
Mobile	27 33,130	33 38,575	14
Total	15,351 \$63,972,934	13,111 \$31,909,192	100

\* Including Manhattan and Bronx.

† Loss.

Of the group of fifty cities, forty show increases, the greater number of which are enormous, reflecting a remarkable growth in population. It would seem, further, that it is a healthy growth, as all classes of buildings are fully occupied, with no reported slump in rents in any section. New York City leads, with an increase of 754 per cent; Chicago, 69; Philadelphia, 55; Pittsburg, 85; St. Louis, 36; Cincinnati, 113; Cleveland, 56; St. Paul, 108; Minneapolis, 82; Omaha, 175; Spokane, 100; Portland, 2, while a group of interior smaller cities have tremendous gains, including Pueblo, 658 per cent; Harrisburg, 434; Worcester, 333; Dallas, 386; Rochester, 175; Columbus, O., 111.

The decreases are in enterprising but small cities in which one building may cut considerable figure in the matter of percentage one way or the other, these cities being so remote from each other that, taken as a group, they have no little bearing upon the whole situation.

W. E. Cobean, general sales agent of the Wolverine Portland Cement Company, whose office is now in Chicago, will transfer his headquarters on May 1 to Coldwater, Mich., so as to be close to the mill. The object of this move is to have the sales department in close touch with the operating department. Mr. Cobean will look after his Chicago trade as usual, as well as the trade in the other centers.

The Progress Brick Company has started the erection of its plant at Setauket, Long Island, and its principal office will be located at that place. The company will manufacture front and building brick.

## ROCK PRODUCTS



**The National  
Builders' Supply Association**

Meets Annually.

OFFICERS.

Frank S. Wright, Chicago..... President  
Harry W. Classen, Baltimore..... Treasurer  
James W. Wardrop, Pittsburgh..... Secretary

STATE VICE-PRESIDENTS.

Arkansas.....	Charles E. Taylor, Little Rock
California.....	C. J. Waterhouse, San Francisco
Delaware.....	Charles Bye, Wilmington
District of Columbia.....	S. D. Lincoln, Washington
Indiana.....	H. B. Lyman, Lafayette
Iowa.....	H. H. Halliday, Cairo
Kentucky.....	R. Hay, Dubuque
Louisiana.....	Owen Tyler, Louisville
Maryland.....	John J. Vockel, New Orleans
Massachusetts.....	J. J. Kelly, Baltimore
Michigan.....	B. F. Marsh, Worcester
Missouri.....	S. J. Vall, Detroit
Minnesota.....	Howard McCutcheon, Kansas City
New Jersey.....	F. J. Nixon, Duluth
New York.....	Ambrose Tomkins, Newark
Ohio.....	M. A. Reeb, Buffalo
Pennsylvania.....	E. S. Walton, Youngstown
Rhode Island.....	Cyrus Borgine, Philadelphia
South Carolina.....	C. M. Kelly, Providence
Tennessee.....	A. G. Gower, Greenville
West Virginia.....	W. W. Fischer, Memphis
Wisconsin.....	R. W. Marshall, Wheeling
Washington.....	R. C. Brown, Oshkosh
Georgia.....	S. W. R. Dalley, Seattle
	P. G. Hanahan, Atlanta

EXECUTIVE COMMITTEE.

James G. Lincoln, Boston; Walter F. Jahnke, New Orleans; A. E. Bradshaw, Indianapolis; Gordon Willis, St. Louis; V. H. Kriegshaber, Atlanta.

Official Organ, ROCK PRODUCTS

**N. B. S. A. Executive Committee Meets.**

President Frank S. Wright, of the National Builders' Supply Association, has taken up the executive reins and by the personal activities of Secretary James W. Wardrop has inaugurated an aggressive campaign, which has been termed the 1,000 Club. This means that each one of the state vice-presidents of the National Association will be called upon to do yeoman service for the association to secure a total roll of 1,000 members by the next annual convention.

On April 20, the first official meeting of the executive committee was held in the president's office at Chicago. The entire executive committee were in attendance and sitting: James J. Lincoln, of Waldo Brothers, Boston, Mass.; Walter F. Jahnke, of Fritz Jahnke Sons, New Orleans, La.; A. E. Bradshaw, Indianapolis Mortar and Supply Company, Indianapolis, Ind.; Gordon Willis, Hunkins-Willis Lime and Cement Company, St. Louis, Mo.; V. H. Kriegshaber, Atlanta, Ga. Besides these were John A. Kling, of the Cleveland Builders' Supply Company, Cleveland, O.; Charles Warner, of Charles Warner Company, Wilmington, Del.; J. C. Adams, of D. J. Kennedy & Company, Pittsburgh, Pa.; E. S. Walton, of Youngstown Ice Company, Youngstown, O., and James W. Wardrop, secretary of the association.

It was an enthusiastic meeting and these leaders of the National Association movement accordingly pledged their personal attention and cooperation to the advancement of the co-operative principles among the men who handle and distribute building supplies of every description.

**Watch the Credits.**

The short volume of business last year had some dealers acting as if they never expected to get an order again. They furnished long bills of materials without any definite terms of settlement, except the long-winded kind that bring disaster or loss to the material man. In other words there was a lot of bad business made by extending credits to contractors on any old terms long after there was no more assets to realize payment from. Of course the hungry wolf is not a discriminator of persons, neither is a needy supply man as discriminating as he might be of the people he sells his goods to.

**Walter B. Creed Company.**

NEW ALBANY, IND., April 15.—W. B. Creed has been succeeded by the Walter B. Creed Company, dealers in builders' supplies. The officers of the new company are as follows: President, Walter B. Creed; treasurer, J. George Seigle; secretary, Frank M. Gengen. The last two named are old employees of Mr. Creed. The capital stock of the company is \$25,000.

**Georgia's Vice-President Enthusiastic.**

V. H. Kriegshaber, one of the leading retailers of Atlanta, Ga., is vice-president for the state of Georgia of the National Builders' Supply Association. Since attending the Louisville meeting he is more enthusiastic than ever over the work of the organization, and has to say on the subject: "There should be hearty co-operation among the members of the National Builders' Supply Association, as well for the uplifting and development of the association, as for their own personal advantages which they may derive therefrom.

"This country owes a great deal of its wonderful development to the co-operation that exists among men identified in similar lines of trade. There are all sorts of organizations, covering every possible line of development. The object is obvious. When men in similar pursuits find time to get away from their place of business and meet others in the same line for two or three days in convention, there is an interchange of ideas and experiences that could not be secured in any other way, and in any other place. Men will talk about their business at places of this kind as they will not talk in their own offices.

"Following these conventions, it is but natural that manufacturers of kindred lines can also be found there for the purpose of exploiting their goods. If a member will attend these conventions for the purpose of meeting not only his competitors, but all others interested in his line of work, he will get the best of results out of such visits; besides, he will help in the upbuilding of the organization which has for its object the promotion of good feeling among its members and



V. H. KRIEGSHABER, ATLANTA, GA., VICE-PRESIDENT, NATIONAL BUILDERS' SUPPLY ASSOCIATION.

fair dealing between members, the public and the producing manufacturers.

"The last meeting in Louisville was the first one that I had the pleasure of attending, and one little experience there convinced me that there is a very practical side to these conventions. I secured a business connection which enabled me on my return to Atlanta to place an order that has netted me twenty times the annual dues which I am paying into the association. If I had not gone to Louisville this opportunity would have been lost to me. I do not think that my experience is different from that of other members who can grasp the business end of the convention, and get the best there is out of it.

"But aside from the narrow personal interest and advantage that a member gets, he should feel that broader interest in the development of his own business through the efforts of the national organization, and I feel sure that it will be a comparatively short time when we will have the leading men in our line of business as active members of the organization."

**Will Deal in Lime and Plaster.**

A certificate of the incorporation of the Birmingham Lime and Plaster Company has been filed in the Probate Court, Birmingham, Ala. The purpose is to deal in lime and plaster and other supplies. Authorized and paid-up capital stock is given at \$81,000. Officers are: C. B. Rogers, president; A. V. Fair, vice-president; J. H. Berry, secretary and treasurer.

**AT ST. JOSEPH.**

ST. JOSEPH, Mo., April 17.—Old, ultra-conservative St. Joseph, so old citizens say, never had a boom. In this respect, at least, it is unlike most western cities. It is solid, substantial and on the safe but sure plan. There are those who think that the old town has made more rapid strides in the past two years than in any two previous years, and that is a fact, no doubt, if outward appearances count for anything.

St. Joseph can now boast of one of the finest, most modern and up-to-date hosteries in the West in the Robidoux. This name has been used in a playful sense by those who are awed by its magnificence, and they do say they "rob the ducks" that stop there. Of course high-class accommodations cost money. A good hotel is a fine advertisement and the people here are proud of it, and justly so.

Then there is the Auditorium, of reinforced concrete, built to seat 8,000. This is a radical departure for St. Joseph and shows that the people have respect for concrete. They also know that it is fireproof, because when they had a ball there recently and the decorations and scenery caught fire not a single woman fainted. Everybody sat calmly in their seats and watched the firemen pull down the burning material and stamp it out. "The building can't burn," each whispered to the other. All the floors, walls and partitions are of concrete. In place of stairways leading to the balcony they have inclines, which are not sharp and do not tire one to climb. It was opened to the public last September and has already held many notable gatherings. Next week the merchants and manufacturers will hold an Industrial Exposition at the Auditorium. The late William Mignery was the contractor. He was killed by a brick falling on him during the construction of the Robidoux Hotel. His death was greatly to be regretted, although the Auditorium will prove a lasting monument to his memory.

St. Joseph is noted for the number and size of its wholesale houses. These and the packing house industry are sufficient alone to make the city stand out prominently on the map.

Several large structures are now nearing completion, among which might be mentioned the Tootle-Wheeler Building, for which the Selden-Breck Construction Company were the general contractors, and the Wyeth hardware warehouses, for which D. E. Marshall & Company were the contractors. These last buildings are immense structures, covering several city squares and many stories in height. D. E. Marshall & Company are also erecting an addition to the Artesian Ice Company's plant. George Allen & Son have the contract for the new entrance to the courthouse.

The prospects for the coming season were never brighter, as there are quite a number of large structures contemplated besides innumerable small ones.

The city is putting in seven new sewers, four of which will be concrete. One of vitrified brick has just been completed, and also one of the concrete sewers. Quite a number of buildings are well under way and a lot more on the boards, so the prospects are that the season will be a big one.

D. C. Mannan & Company, at Sixth and Lafayette Streets, say that they have plenty of work on hand and that the outlook is very bright. "The prices of building materials have held their own," said Mr. Mannan in discussing the matter. This firm handles Iola, Atlas, Ash Grove and Dewey Portland cements, Phenix lime, Acme and Ivory wall plaster, Medusa waterproof cement, Laclede-Christie fire clay products, and a complete general line of builders' supplies.

John W. Bruce, at Sixth and Olive, says the prospects for the coming season are good, as there is plenty of building in prospect. With the opening of the spring season everything has taken on a lively air and business has felt the stimulus. Mr. Bruce handles a complete line of building materials and has one of the largest yards in St. Joseph. He is the agent for the Western States Portland cement and Peerless white lime. He also handles Louisville cement and Golden Seal plaster.

The Hesse Building Material Company are also optimistic over the outlook and say that the season has opened up in good shape and they are already selling considerable material. They handle Sunflower and Red Ring Portland cement and Ash Grove lime, and a complete line of builders' materials, including paints, varnishes, glass, etc. They have a store down town at 216 South Fifth Street.

Preston & Newcomb also do an extensive business in building materials, being the exclusive agents for Kansas City Portland cement. They say business with them has been very good. They are located at Fifth and Patee Streets and carry a large and complete assortment of sewer pipe, wall coping and flue lining, besides doing a coal business of large proportions.

**Enterprising Missouri Concern.**

Clifford W. Lyon, vice-president and general manager of the Kansas City Brick and Stone Company, Kansas City, Mo., recently incorporated with a capital stock of \$250,000, and successors to the Crushed Stone and Filler Company, writes:

"This company owns twenty-one acres of rock and shale in a hill, average height 165 feet from railroad level, and we have no stripping. We are situated nine miles from the center of Kansas City, Mo. Our property adjoins the Standard Oil Refinery at Sugar Creek, Mo., from which company we get our fuel oil in a pipe line to our own tanks. We are located on the main line of the Atchison, Topeka and Santa Fe Railroad and on the Missouri River.

"We have a large deposit of high-grade limestone and also one of building stone. We have a solid bed of shale sixty-five feet in height and over twenty-one acres in extent. Our raw material is conveyed to the plant entirely by gravity.

"We have completed our small crushing plant, which has a capacity of 500 cubic yards per day. We are increasing the size of this plant so that it will have an ultimate capacity of 2,000 cubic yards of stone per day. Our brick plant has a capacity of 125,000 vitrified, paving and building brick per day and 75,000 hollow brick, tile and fireproofing per day.

"Our principal market will be Kansas City and the Northwestern and Central Western States. We have contracts for our material now which will keep the plant in full operation for nineteen months. At the present time we are employing about sixty men, increasing our force as fast as possible, and when our crushing plant and brick plant are both in operation we will employ 250 men.

"Our machinery, which is all contracted for, is modern and up to date in every particular. No legitimate expense has been spared in purchasing the best machinery that money could buy. We are using the Austin Manufacturing Company's crushers, screens, elevators, etc. The undersigned has personally designed and superintended the construction of the plants and is in close touch with the work at all times.

"A number of gentlemen who are experts in this line of work have visited the property and have declared themselves in the most favorable terms of the natural advantages which this property has for an operation of this kind.

"We are 'boosters' and welcome competition. We are always glad to receive suggestions from those qualified to give advice. The writer has great faith in the publication ROCK PRODUCTS, and looks anxiously forward to the receipt of each issue. It has been his good fortune to visit many of the most successful plants of this description, and has never failed as yet to come away from a visit of this kind without some excellent suggestions and ideas.

"I want to assure you that ROCK PRODUCTS will have our hearty support."

The officers of this company are: Robert Nesch, president; Clifford W. Lyon, vice-president and general manager; William Mansfield, treasurer, and Mark Cowpinger, secretary.

**A Progressive Michigan Retailer.**

BAY CITY, MICH., April 20.—F. P. Young & Co. are an important factor in builders' supplies in this section. Mr. Young has had some interesting experience in the lime business. He had a notion that hydrated lime was a great thing and that a big trade could be established on its sale. After going over the matter thoroughly Mr. Young decided he would handle some of it and try it. That was about three years ago, when hydrated lime was practically a new thing in Bay City.

The first obstacle in the way was, how to get the trade to buy it. Right here is where Mr. Young proved himself to be a real, genuine merchant. He took a chance and drew the right number. He ordered two cars of hydrated lime and stored it in his warehouse. Of course he sold some of it, but most of it he gave away to contractors to try. Every man who was a possible user of lime got some of the hydrated for a sample. This method proved to be a great business getter, and today F. P. Young & Co. sell great quantities of this lime and sell by far the greater part of this product in Bay City.

The property on which the warehouse and yards of this company are situated has been sold to the city, to become a part of a park system, so that the company must move to a new location this summer. This gives the company a big chance to put up a warehouse built on modern ideas. Mr. Young is planning to take advantage of this opportunity. He will build a large new brick warehouse for cement, lime, plaster, etc., with a wide driveway running the entire length of the building through the center, with doors at both ends. A siding will be put in so that the cars

can be unloaded right into the warehouse, which will do away with a great deal of extra handling. The other details of the warehouse have not been definitely planned as yet, but the inside will undoubtedly be arranged to economically meet the demands of the company's large trade.

A representative of the company stated that last year, by actual count, there were 590 houses built in Bay City, and that the prospects are for a big business this year. The company is planning to push its business hard this season, and with its advanced methods of getting trade it will have its share of the business.

**The Soliloquy of Scribo.**

There are dealers in the business who have their heads as full of ideas on how a real, commodious warehouse and yard ought to be built as a ripe watermelon is full of seeds. Then there are other retailers in the business who, like myself, have no good ideas about these things until it is too late to use them. It is much easier to step into a warehouse and point out how much better it could have been built than to think out a new plan at the beginning and have one built without inconveniences.

It is one of the most common things in the world to hear a man say, "Now, if I had it to do over again, I would do so-and-so." And then he continues to tell, with as much ease as a bird can fly, just how an ideal warehouse should be built.

It is not for convenience alone that an ideal warehouse is desired. Every man wants to make two things: a big business, and money, and the more important of these is to make money.

One requisite to money-making in the retail business is to have a warehouse that will allow the economical handling of building materials. I have been in some warehouses where almost a third of the profit in the business was eaten up because of bungling methods provided for handling and storing the supplies.

In nine cases out of ten you will find that the retailer stores his lime in an open bin, and often he will keep it in an open shed in the yard. Under such conditions there is bound to be more or less loss by air-slaking. In many cases it is not possible to get enough for the good lime that is sold to make up for the loss in the waste.

I called on a retailer in the Northwest not long ago and was talking with him about this very question, and he said he gave all his slaked lime to farmers to get them to haul it away. He said it made a fine fertilizer for the soil. Think of it—giving away profits in times like these, when even the price of bread is going higher and higher and the loaves growing smaller and smaller.

There are some retailers who build their warehouses with a view to taking care of their lime. I called on a prominent retailer in Michigan recently and found he had given considerable thought to the question. It is always a pleasure to meet retailers who take a keen interest in their business, an interest that keeps them on the job all the time, planning for bigger things and better systems for going after the trade. These are the fellows with the ideas—and who get the business. That is the kind of a retailer my Michigan friend is. He built his warehouse for business. In one corner, on the first floor, close to the shipping door, he built a fairly good sized bin for lime. This bin is sealed up from floor to ceiling with a close-fitting door on one side. This arrangement provides a place for the lime that is practically air-tight, and the lime is kept in good condition until it is sold. A carload is bought at a time, and contractors can get good fresh lime whenever they need it.

It is also a convenience to have this bin near the shipping door, as the lime can be loaded right onto the wagon without tracking it all over the warehouse. Cleanliness and neatness about the warehouse are important factors in any man's business. It may appear to many retailers that this is a little fastidious for a retailer in this line, but I know of many retailers who might be termed cranks on this subject, and you can't make them believe that it does not pay to make the warehouse "look good" to their customers.

There is another phase of the lime business that my Michigan friend makes money on, and that is headed lime. He found there was some demand for lime put up in barrels, and he began to push it. He found there was a part of the trade in his town that didn't want anything else. And from this he has built up quite a trade on headed lime.

**Will Erect Lime Kilns.**

The North Carolina Talc and Mining Company, Hewitt, N. C., of which Frank R. Hewitt is president and treasurer, and Frank E. Fry manager,

**Will Erect Hoisting Plant.**

The Independent Sand and Gravel Company, Evansville, Ind., will construct a hoisting plant at the foot of Pine Street.

**Gravel Plant in Oklahoma.**

SHAWNEE, OKLA., April 10.—The Shawnee Rock Products Company, H. G. Larsh, manager, will establish a plant for the production of screened gravel and sand, and will erect buildings at a cost of \$1,000. Machinery will be installed, with C. G. Bible, engineer in charge.

**New Sand Plant.**

DES MOINES, Ia., April 10.—The Coon River Sand Company, of which Grover C. Hubbell is manager, is putting in operation a new plant on the Raccoon River about one-fourth of a mile west of the Chicago, Burlington & Quincy Railway bridge. A pumping plant will be installed and a spur to it built by the Des Moines Terminal Company.

**Sand Company Organizes.**

COLUMBUS, O., April 10.—The Woolenweber Sand and Gravel Company, which was incorporated recently, has organized by the election of W. O. Woolenweber, president; Herman Woolenweber, vice-president and treasurer; F. D. Woolenweber, secretary. The company will have general offices in South High Street and will handle all kinds of sand and gravel, which it will obtain from a large gravel bank which it has leased near Green Lawn Cemetery.

**Secures Long Lease.**

DAYTON, O., April 10.—The Washed Gravel and Sand Company, incorporated recently with a capital of \$20,000, has secured a 99-year lease on a tract of land south of the city, along the river. R. E. Evans is the manager of the company. The concern will build a screening plant and will handle 500 yards of washed gravel, sand and crushed stone per day.

In connection with the lease of the land a railway switch is being built from the Big Four across the levee and the Springboro pike.

**Has a White Silica Deposit.**

People interested in the development of silica sand are invited to note the following statement which the George R. Case & Sons Lime Company, of East Sylamore, Ark., make:

"We have a very fine deposit of pure silica sand and desire to interest some one in it who will develop it. The sand is in rock form, but very soft, and is as white as sugar. It needs no cleaning, and a very slight weight crushes it. This deposit is within a few hundred feet of the railroad and within easy access to our siding.

"We have not the capital to develop this nor the time to devote to the work, so would almost give it to the party if development is done. We can furnish samples if you think you could use them to any advantage."

**The Illinois Valley Sand Company.**

OTTAWA, ILL., April 15.—The Illinois Valley Sand Company's plant at this place has been running right along, and as the company has a process for drying, they can ship the sand in winter as well as in summer. The sand from the pit is first run through spiked rolls to reduce the lumps. A machine was recently placed for reducing the oversize which comes from the first screen. This is a dry pan, five feet in diameter. It has two wheels, fourteen inches wide and made of chilled steel. The bottom of the pan is of steel plate five inches thick and perforated with quarter inch openings. In the process of drying the sand the company has installed a system of burning oil, which replaces the coal burning. Thus the sand is not discolored by the smoke. As the sand is especially adaptable for moulding purposes, the company's chief trade is among the iron foundries. L. M. Reed is superintendent of the plant.

# SAND-LIME BRICK

## Patent Rights for Australia Sold.

The International Sand-Lime Brick and Machinery Company, of New York, has sold the patent rights for Australia for its process of making sand-lime brick to a syndicate composed of prominent Melbourne people, headed by an architect and engineer who spent nearly a year in this country investigating the business. This syndicate proposes to build a series of factories in the various states of Australia and have arranged a private code so that machinery may be more readily ordered by cable.

## Building Plant at Portage.

The International Sand-Lime Brick and Machinery Company, of 90 West Street, New York, is installing its system at Portage, Wis. The company has contracted to build the entire plant for the Columbia Silica Company, and it is expected that it will be turning out sand-lime brick by May 1.

The plant will be built along similar lines to that of the Cranford Paving Company's plant at Washington, D. C., which is generally considered a modern plant. However, steam power will be used instead of electric, as is the case in the Washington plant. "The material at Portage is the finest we have ever seen," says Franklin Henshaw, vice-president of the International Sand-Lime Brick and Machinery Company, "and you can readily understand the quality of the brick will be of the best."

## Flourishing California Plant.

BAKERSFIELD, CAL., March 20.—Although oil abounds in this part of the country, and is, of course, a great industry, there are several manufacturing plants here, among which is the enterprising plant of the Bakersfield Sandstone Brick Company. This plant began operations in the early '80s and has, through careful management and sterling business enterprise and push, run continuously, until now the business is on a strong footing.

James Curran, manager, is one of those hustling, wideawake men that believe in up-to-date machinery and equipments. Good work is turned out, as some of the beautiful buildings testify—some in red and other buildings in white brick, or combined, as artistic and pleasing in effect as an artist's study.

The company also manufactures artificial stone and are large dealers in lime and cement, besides handling a fine line of plaster. Among some of the buildings that were constructed of sandstone brick furnished by this company are the following, cuts of which are shown:

## Adopts a Trade-Mark.

The United States Brick Corporation, of Michigan City, Ind., has started an active campaign among dealers and architects to better acquaint them with its products.



BEALE MEMORIAL TOWER, BAKERSFIELD, CAL.  
BUILT OF SAND-LIME BRICK.

The corporation has adopted a unique trade-mark—"Casio"—which applies to brick and stone. They explain this trade-mark by saying the "Ca" is the symbol for lime, the "si" is for silica, and "o" for oxygen.

## New Incorporations.

The New York Sand and Gravel Company has been incorporated at New York City to deal in sand, gravel and stone. Capital stock, \$10,000. The incorporators are: Jacob Friedman, 107 West One Hundred and Thirteenth Street; William Michaelis, 63 East Seventy-fourth Street; Josephine E. Dolan, 104 West One Hundred and Second Street, all of New York.

The Washed Quartz, Gravel and Sand Company has been incorporated in New York City to deal in quartz, gravel and sand. Capital stock, \$5,000. The incorporators are: Joseph Currey, Rosebank, N. Y.; John Hincliffe and James Christian, Paterson, N. J.

The Oak Park Sand Company has been incorporated at Des Moines, Ia., with a capital stock of \$6,000. The incorporators are: C. A. Carpenter and C. G. Cain.

The St. Louis Sand and Gravel Company has been incorporated at St. Louis, Mo., with a capital stock of \$100,000, by D. C. Hartwell, F. C. Gensler and F. J. Schneeberger.

The McCurdy Sand Company, Steubenville, O., has increased its capital stock from \$2,000 to \$15,000.

The Louisiana Gravel and Sand Company has been incorporated at New Orleans, La., with a capital stock of \$75,000, by Charles Mendelson, J. M. Chapman and G. P. Parkerson.



METHODIST CHURCH OF SAND-LIME BRICK MADE BY THE BAKERSFIELD SANDSTONE BRICK COMPANY, BAKERSFIELD, CAL.

## Views of a Leading Builders' Supply House.

The Wisconsin Lime and Cement Company, whose offices are in the Chamber of Commerce Building, Chicago, are one of the most up-to-date builders' supply houses in the entire United States. Every comfort, every convenience for their customers, has been made by them. Every department is complete and all lines are carried by them. Their sample room is a regular curiosity shop. Everything in the builders' supply line can be obtained from them. Their customers seem to appreciate this, as it obviates the necessity of buying and checking up amounts ordered, delivered and paid for from many different firms. Courtesy is shown everyone. 'Tis a pleasure to chat with them, even when you do not call to buy; and yet business is overflowing with them, which under the circumstances is only natural. With their thirty odd salesmen calling on the trade in Chicago alone; with ten yards scattered over the city and 260 head of horses to deliver goods from the nearest yard to destination, promptness of delivery is assured and orders necessarily follow. Judging the business situation from them, trade is booming in Chicago. Never has construction been more active. E. J. Cormach, their vice-president, sees only prosperity before the country. He thinks that the tariff tangle will soon be straightened out and then states that nothing will interfere with the general improvement that is only waiting on this settlement to sweep the country.

## An Old Calciner.

In his rambles around the country one of the ROCK PRODUCTS men met Zade Swicher, who is one of the oldest calciners in the plaster mills of the Southwest. He is now with the Monarch Plaster Company at Wataonga, Okla., and has some interesting reminiscences on the plaster business from its earliest days in that section. Twenty years ago he was employed by the Acme Company in the Gypsum City, Kan., mill. At that time gypsum was used and the kettles of three-ton capacity were filled by shoveling the dirt into the kettle by hand. In those days one batch was made in the morning, when the force adjourned for dinner, and another batch was made in the afternoon. No retarder or hair was used and the plasterers had to manipulate the material as best they could. Even with these difficulties some of the operators had four-kettle mills which were pushed to the limit of their capacity.

## Organize New Company.

GRAND RAPIDS, MICH., April 10.—With a capitalization of \$30,000, the New Brick Company is being organized to conduct the business of the Valley City Brick Company, at Fuller and East Bridge Streets. The Veneklassen Brothers, who were active in the latter and who conduct brickmaking plants at several points in this portion of the state, will manage the enterprise.

## Reduces Capital Stock.

LANSING, MICH., March 15.—The Lansing Brick Company has reduced its capital stock from \$50,000 to \$25,000, fully paid up. The concern has its plant in operation and a good business under way.

## Elect Officers.

NEBRASKA CITY, NEB., March 15.—The stockholders of the Nebraska City Brick Company held their annual meeting recently and elected the following officers: President, J. M. Huberle; vice-president, J. W. Butt; secretary and treasurer, F. J. Homeyer; directors, O. C. Morton, J. H. Huberle, F. J. Homeyer, J. W. Butt and George Rader.

## Elects New Directors.

NEW BRITAIN, CONN., March 18.—The annual meeting of the stockholders of the Kensington Brick Company was held recently. Among the important business at hand was the election of directors for the ensuing year. Those decided upon are as follows: John Carbo, Benedict Carbo, Frank P. Day, Michael Naples, Antonio Naples, Dr. E. G. Sera, Enrico Ciapponi. The following officers were elected: John Carbo, president and treasurer; Frank P. Day, secretary; Benedict Carbo, vice-president.

## Brick Plants Consolidate.

LEXINGTON, KY., March 11.—The Lexington Brick Company, of which F. A. Cramer is president and Harry C. Cramer is secretary, has taken over the plants of the Monticello Brick Company, at Monticello, Ky., and the Fayette Brick and Supply Company, of this city, and will consolidate the three plants under one management. Each of the plants acquired has a capacity of 3,500,000 bricks a year. About \$25,000 is involved in the deal. The Monticello plant will be removed to this city.



#### Resume Operations.

CRAWFORDSVILLE, IND., April 5.—After a long shutdown, caused by the necessity of increasing the size of its plant, north of town, the Crawfordsville Shale Brick Company resumed the manufacture of bricks this morning at full speed. The capacity of the plant is now 25,000 bricks a day. It makes a hard building brick of shale, but not a fancy pressed brick. Thirty-five men are employed. James E. Evans is president; J. A. Gilbert, vice-president; Bruce Luckett, secretary-treasurer; John Ferguson, superintendent. Directors, W. T. Whittington, T. E. Nolan, Joseph Herron and the officers.

#### Will Manufacture Brick and Drain Tile.

A company has been formed at Melvin, O., with a paid-up capital of \$12,000, for the manufacture of brick and drain tile, and preparations have been made to commence the manufacture of these articles at once. The soil in that locality is excellent for the purpose.

#### Will Operate Brick and Tile Factory.

COPPERDOM, MICH., April 10.—The Northern Michigan Brick and Tile Company has filed articles of incorporation in Houghton County. It is capitalized at \$50,000. The company will operate at St. Ignace and at Calumet. The incorporators are William M. Harris, of Calumet; William A. Bateman, of Calumet; Ed A. Reavie, of Laurium, and Elsie L. Huddleston of Laurium, and Ed A. Reavie as trustees.

#### Break Ground for New Plant.

The Harbison-Walker Refractories Company, of Pittsburgh, has broken ground for a new plant for the manufacture of bricks at Wylam, near Birmingham, Ala. The plant, which will cost about \$300,000, will have a capacity of 40,000 brick a day. It will give employment to 200 men. It is expected the plant will be in operation by September.

#### Purchases Brick Plant.

WESTPORT, MD., April 1.—The Westport Paving Brick Company has purchased the entire plant of the former Baltimore Vitrified Clay Company, located at Westport, Md., and will reopen the works on an extensive scale for making all kinds of paving and other hard bricks.

Comprised in the plant is a tract of 101 acres of fine brickmaking clay, and it is situated directly on the water front, being contiguous to the Baltimore & Ohio Railroad and the Washington, Baltimore & Annapolis Railway. On the grounds are an office building, frame stable, sand-house, fan-house, three Dutch kilns, seven beehive kilns, twenty-one drying kilns and an extensive wharf.

The former Baltimore Vitrified Clay Company, which built the plant about four years ago, went into receivers' hands in the early part of last summer and the plant was later sold at auction. It was bought in by the Westport Realty Company for \$63,850, this price also including a tract of clay land located at Ijamsville, and the machinery comprising the plant. In the first-mentioned transaction the property was bought from the above realty company at a nominal consideration.

#### Will Manufacture Paving Brick.

The Donley Brick Company recently resumed operations after a shutdown of several months' duration. During that time extensive improvements were made, among the most important being the installation of a new down-draft kiln. The company expects to shortly begin the manufacture of paving brick, its operations heretofore having been confined to red building brick.

#### New Plant of Baltimore Company.

The Baltimore Retort and Fire Brick Company, Hull and Nicholson Streets, Baltimore, Md., are sending out the following announcement:

"It gives us great pleasure to inform you that having fully recovered from the effects of the fire that destroyed our old plant, we are now in better position than ever to supply your wants in fire bricks and shapes of every description.

"These largely increased facilities for manufacturing warrant a corresponding increase in our contracting and engineering departments. For this purpose the services of E. L. Rieha, who is well known to the gas fraternity, have been secured to assist L. N. Ranneke in designing and constructing coal gas benches, with horizontal, inclined or vertical retorts, and other modern, economical constructions requiring high-grade material."

#### Satisfactory Brick from Kansas Plant.

The Coffeyville Vitrified Brick Company, of Coffeyville, Kan., is now furnishing satisfactory brick in Little Rock, according to tests made by city officers there. In a letter to the company, H. L. Remmel, president of Improvement District No. 12, states that in a recent test with the rattler, the erosion of the Coffeyville brick was less than 10 per cent.

#### Will Manufacture Tile.

MANITOWOC, WIS., April 11.—The Manitowoc Clay Product Company has decided to add a new industry to those being conducted by it, and recently purchased machinery with which to engage in the manufacture of tile.

#### Savage Mountain Adds Dust Mill.

The Savage Mountain Fire Brick Company, Frostburg, Md., has recently completed a new dust mill with all the latest up-to-date machinery. It makes a specialty of the best finely ground fire clay and calcined fire clay. This concern is one of the oldest in the business, having been actively engaged for forty-five years. The company's fire brick are especially adapted to cement and lime kiln linings.

#### To Extend Capacity.

The Maumee Brick and Tile Company, Ft. Wayne, Ind., will extend the capacity of the plant located on Maumee Avenue during the coming summer, and when all conditions are completed the place will have a capacity of 60,000 brick per day.

#### New Incorporations.

The Cobb Brick Company has been incorporated at Fort Worth, Texas, with a capital stock of \$30,000. The incorporators are H. H. Cobb, F. C. Cobb and J. C. Harris, all of Fort Worth.

The Queen City Pressed Brick Company has been incorporated at Cincinnati, O., with a capital stock of \$25,000, by Joseph Lemkuhl, Smith Hickenhoper, Edward Bridger, J. F. Scott and D. T. Howard. The company has a plant at St. Bernard.

The Edgemont Feldspar Company has been incorporated at Camden, N. J., to manufacture brick and tile. Capital, \$100,000. Incorporators are: J. Edward Dunwoody, Francis C. Barton and Frank B. Groff.

The Texas Pressed Brick Company has been incorporated at Ferris, Ellis County, Texas, to manufacture brick. The incorporators are John Snyder, J. R. Wilson, A. A. Goble and others.

The Kaolin and Clay Products Company has been organized at Augusta, Ga., for the purpose of manufacturing and dealing in brick, with \$500,000 capital stock. The officers are president, Roy Matthews, of Tisbury, Mass.; treasurer, Sidney A. Wilbur, of Boston, Mass.

The Tuscarawas Brick and Clay Company, Massillon, Ohio, has been incorporated by Samuel L. Douglas, Herman Leoffler, R. R. Leoffler, R. C. Choate, J. L. Leoffler and L. B. Douglas. Capital, \$100,000.

The Ulster Brick Company, Newburg, N. Y., recently elected the following directors and officers: Directors, Hiram Merritt, Geo. H. Merritt, Benj. J. Macdonald, Fred C. Balfe and L. Merritt; president, Hiram Merritt; vice president, Geo. H. Merritt; treasurer, Benj. Macdonald; secretary, Fred C. Balfe.

The Barron Red Pressed Brick Company has been incorporated at Green Bay, Wis., with a capital stock of \$10,000. A complete equipment of brick making machinery is being purchased and the plant will have a capacity of 40,000 bricks in ten hours.

The Blandon Clay Company has been incorporated at Camden, N. J., to manufacture clay into brick. Capital stock, \$50,000. The incorporators are James F. Davis, G. R. Gilkyson, Francis C. Barton.



#### Harmony and Better Prices.

For many months past the plaster manufacturers have vied with one another to see who could make the lowest price for his product. This has been very entertaining to some people, though the ultimate gainer has not taken advantage of the existing conditions as he might have done.

Every plaster manufacturer knows that prices have been down to actual cost of production and in some cases less than cost. Why is this?

Tonnage is as large as could be expected. No complaints are heard on the volume of business, as each mill is getting enough orders to keep fairly busy.

If we have an overproduction, and perhaps there is, let us get together and see how we can take care of this oversupply. New uses must be created for plaster. A greater amount must be sold for the present uses. Let the inventive minds get busy and open up new fields for the product.

There is no better time than right now to stop this senseless cutting of prices. No one mill can handle all of the business and each manufacturer must content himself with a fair and reasonable amount.

Let each one examine his books to see if he has been entirely blameless in the matter of cheap prices. Then—when the opportunity presents itself—be willing to meet his competitor and acknowledge his fault with the resolve to help bring about a better condition.

It certainly behooves everyone in the business to work for the best interests of the industry, for by improving it he benefits his own particular institution and organization.

For the good of all let us have harmony and better prices so that the plaster business may be, as it rightfully should be, a factor to be considered in the first rank of the material industry.

#### Plaster Specifications Essential.

Several years ago an effort was made by the plaster manufacturers to secure, if possible, uniform specifications for plaster. This was supported very satisfactorily by the dealers, but at that time the manufacturers could not see the benefit to be derived from proper mixtures of plastic materials.

Several dealers and mixers recently discussing this matter brought out the fact that in the purchase of plaster and sand, the dealers had the opportunity of influencing the contractor to use the proper proportions in mixing mortar, and insisting that they would not stand back of materials that were put on with a lean mix. Each dealer therefore as well as manufacturer of plaster should try to educate his contractor in the proper mixing of materials and then insist on selling him proportions in line, with say fifty bushels of sand to one ton of gypsum. It would be easier sailing and there would be less dissatisfaction with plaster. There would be more plaster used and more satisfaction in its use.

We would like to have the comments of manufacturers, dealers and mixers on this subject. The attention of all must be brought to this matter individually and as a whole trade, that the architect and contracting plasterer himself may be set right on the best use and mix of plaster.

#### Acme Extending Operations in California.

LOS ANGELES, CAL., April 6.—S. A. Walker, of St. Louis, vice-president of the Acme Plaster Company, has been here for several months and has been acquiring a number of gypsum deposits in anticipation of an enlargement of the plants at Palmdale and this city. They are of eighty and one hundred tons' capacity, respectively. C. L. McDonald, of Kansas City, Mo., has been engaged as Coast director and will make his headquarters in Los Angeles. The extensive building operations going on here are an especial reason for locating a main plant here.

There are immense gypsum deposits in California. Extensive amounts are found all over parts of the Midway and McKittrick oil fields, in the valleys of the Carisa, Cuyama and Elkhorn; around Coalinga, near the line of Monterey and San Benito Counties, at Palmdale and in scores of places.

### Steel Protection for Plaster Corners.

The old-time clumsy method of finishing an exterior angle in plaster with an ugly wooden bead is happily falling into disuse. The angle is sometimes finished with a themis of other hard cement, worked into a bold bead, but this is an awkward contrivance at best. If the wall be tinted this bead forms an unpleasantly strong vertical line, perhaps marring the apparent proportion of height to the other dimensions. If the wall is papered there is always a tendency to crack or break the paper in the quirk; the wooden bead is easily dinted and does not hold water color tints well; the plaster bead is readily broken off in pieces large and small, and is a vexatious difficult thing to repair well, and plaster once it loses its "face" is a poor looking finish; unless the material is quite good, plaster with a ruined surface is particularly disreputable in appearance. The fiber sticks out with seedy looking little bits of mortar clinging to it precariously; the sand "runs" in a constant leak and the housewife is constantly vexed of soul by the little layer of whitish dust that so distinctly remains fast all along the baseboard on the polished margin of the floor. And all this small worry is avoided so simply, by using metal angles. These are made of galvanized iron and attached to the corner stud before lathing. (They may be fixed after this is done), and they form an accurate "scribing" piece for the plasterer to work to; the final coat is brought right up flush with the point of the metal angle, which, being slightly rounded, is scarcely perceptible. Being firmly attached to the angle stone, of wood or metal, as the case may be, and fairly embedded in the plaster, the better forms of metal angles will never be moved from its position by any accidental blow, even a heavy table backed upon it will have no effect. It also forms a perfectly plumb line and paper can be turned over it without trouble. There are various forms of metallic angles, some suited to wooden construction with wooden lath and others are specially devised to suit metal lathing on steel studing. Some of the most effective resemble in shape and cross-section a T-rail, which seems to give the maximum degree of rigidity.

### Growth of Plaster Partition Blocks.

An event of more than passing interest to both the fireproofing and gypsum trades is the resignation of G. Lester Williams, of New York City, from the sales management of the United States Gypsum Company, to become general manager of the Keystone Fireproofing Company, the subsidiary of the Keystone Plaster Company. Mr. Williams assumed his new office on April 1. Coincident with this change comes the announcement of the opening of a New York office of the Keystone Fireproofing Company, at 1123 Broadway, from which it will direct its sales campaign in New England, New York state and Northern New Jersey, a territory which heretofore the Keystone Company has not covered as actively as other sections.

Mr. Williams has become well known to the fireproofing as well as the gypsum trade, leaving the old Metropolitan Fireproofing Company four years ago to start the United States Gypsum Company's fireproofing department, and having built up the business of the latter concern to its present large proportions. In connecting himself with the Keystone Company, Mr. Williams has become the general manager of the oldest, and until the organization of the U. S. G. Company's fireproofing department, the largest concern in the country engaged in the manufacture of gypsum block fireproofing.

In an interview with a representative of ROCK PRODUCTS, Mr. Williams said:

"The Keystone Company has determined that the time is now ripe for departing from the policy of confining its business to what may be termed local territory, and to put into effect a plan of expansion that will carry its well-known product throughout the country; and the company has done me the honor of selecting me to carry out this plan."

"The Keystone Fireproofing Company, under my management, will maintain a policy of freedom from 'entangling alliances' with competitors; but it will do all in its power to establish and preserve the most cordial relations with its competition, for the general advancement of the gypsum fireproofing industry."

"Had anyone predicted, five years ago, the increase in the use of pure gypsum as a fireproofing material that has taken place within that time, his reputation for common sense would have suffered severely. As surely as concrete is displacing clay tile for floor construction, just so surely will the gypsum block eventually entirely eliminate terra cotta or clay tile for partitions, column covering, etc. It is an evolution that is economic, based solely on the superior merits of gypsum as a fireproofing material, and while the terra cotta manufacturers may delay its ultimate triumph by selling their product at or below cost, they can no more prevent it than the iron manu-

facturer of the early days of skyscraper construction could prevent the elimination of the old iron-frame building and the substitution of the present steel-skeleton structure. When conditions and progress outstrip the limitations of any one material, another will be found to take its place. This always has been so, and always will be.

"Gypsum blocks are half the weight of terra cotta or clay tiles; they are more fireproof, not only in the sense that they will not burn, but as non-conductors of heat, effectively preventing the metal work that they cover from becoming heated to an injurious degree; they will effectively resist the action of water after a fire, instead of cracking and flying; they are the most remarkable non-conductors of sound on the market; by reason of their size, causing fewer joints, and their superior bond with the mortar, they form a stiffer partition when erected; and, while sometimes a trifle higher in first cost than the clay tile, the economy in erection due to their size and lightness, the absence of waste in handling and setting, and the saving in plastering, make them the most economical finished partition.

"These facts have become generally recognized by architects and contractors all over the country, and with the prosperity that will undoubtedly be felt in the building trade during the next two years at least, I have no hesitancy in predicting that every one of the standard manufacturers, producing a pure gypsum block, who continue to base their sales campaign on quality and maintain their product on a par with their claims, will enjoy a volume of business in the future compared with which their production in 1906 and 1907 will seem insignificant."

### Plaster Reinforcement For Ceilings.

PHILADELPHIA, PA., April 12.—James T. Allen & Son, 212 South Tenth Street, is one of the old established plastering firms of this city. Twenty years ago Mr. Allen invented a process of reinforcement for ceilings which he describes as follows:

"The renewing or thorough repairing of plastering in houses or other buildings is always accompanied by great annoyance to the occupants when the work is done in the old way and with lime and sand mortar. The dirt and dust resulting from tearing off and removing old plastering are such that this treatment is resorted to only in cases of dire necessity.

The problem that presents itself, therefore, is how to secure the old plastering firmly in its place, and yet have all the advantages of a new surface with the least possible dirt and expense of time and money. Where the walls are of brick or stone, hacking can be resorted to with good results if done thoroughly and with care, but where the ceilings or partitions are lathed this method has proved a total failure, on account of the keys becoming broken and the plastering loosened by the jarring.

We believe that efficiency and simplicity are joined in the following method of treatment: When it is desired to resurface the plastering of either partitions or ceilings we strain woven wire or chicken fencing of about two-inch mesh over the parts to be treated and thoroughly secure it to the joists or studs by sixpenny steel wire nails. This effectually prevents the old plastering from dropping from its place and at the same time gives an ample key or support to the coat to be applied. Over the woven wire so placed we put a coat of wall plaster, and when this has dried, finish the same in the usual way. The added thickness is about three-eighths of an inch. This treatment will give a result far superior to any other process known to the trade. The cost is less than that of replastering in the old way, or of thorough repairing if the work is in very bad condition."

Regarding the subject of organization, they say: "The Master Plasterers" and the Master Builders' Exchange fill the wants of the local trade, but we favor a national association of Employing Plasterers. We are heartily in favor of anything that can be done to advance the interests of the trade, and hope through your valuable paper to keep in touch with all that is being done."

### Plaster Work at Art Exhibit.

PHILADELPHIA, PA., April 1.—The Pennsylvania Academy of the Fine Arts, the schools of which are for the training of professional painters, sculptors and illustrators, held its 104th annual exhibition January 31 to March 14, 1909, which proved one of the most successful displays in the history of the institution, as regards the number and intrinsic merit of the works of art and the interest and appreciation manifested by a large attendance.

Prominent among the works of art were those moulded in plaster, and which attracted considerable attention from the visitors.

Among the notable exhibits in plaster were the "Jaguar," by Anna V. Hyatt, of Washington, D. C.,

"Earthbound," by Louis V. Potter, of New York, two masterpieces of which, unfortunately, no photos were taken, and the "Young Nymph," by Chester Beach, of New York, which was much admired. Mr. Beach is a young man who returned from his studies in Europe about two years ago. He is a contributor to most exhibitions, and was recently admitted to membership in the National Academy of Designs of New York.

Another fine execution in plaster was the head of John La Farge, of New York, one of the most eminent American painters, especially noted for his beautiful work in stained glass for windows, also distinguished as an author of many books on art, among which are "Artist's Letters from Japan" and "Consideration on Painting." This noble head was done by Mrs. Edith Woodman Burroughs, one of the best known among the younger generation of artists. Mrs. Burroughs is the wife of Blyson Burroughs, curator of paintings, Metropolitan Museum, New York. She was born at Riverdale-on-the-Hudson, October 20, 1871, and studied at the Art Students' League, New York, under Gaudens; in Paris, under Inglebert, and was two years in Luc Olivier Meeson's. She has executed statuettes, portraits in low relief, busts of children in marble and decorative sculpture. Exhibited at Champs de Mars, Paris, and in America. She is a member of the National Sculpture Society, and received the Shaw Memorial prize.

### Gypsum Mill Burns.

EPHRAIM, UTAH, April 7.—The mill of the Neph Plaster and Manufacturing Company at Neph was completely destroyed by fire, with a loss of over \$30,000, a short time ago. The mill was an old one and was built at the time of the introduction of this industry into Utah, the company owning it being the pioneer concern to work the gypsum deposits near Neph. It was insured for \$15,000. The principal stockholders of the company are: Senator J. A. Hyde, manager, of Neph; L. S. Hills, J. E. Clinton, Walter G. Filer, Dr. W. S. Ellerbeck, of Salt Lake, and George Whittemore, of Neph.

An order for a new mill with a 300-ton per day capacity was placed about one month ago, and this will be rushed to completion at once. The company had expected to operate the old mill until the new one was finished. The old mill had a capacity of seventy tons per day, and the company anticipated developing other beds of gypsum.

### Will Work Gypsum Property.

SALT LAKE CITY, UTAH, April 11.—William M. Cowley and associates are making preparations to work their gypsum mining property which is situated a mile east of Venice and two miles north of the town of Glenwood. The mine is known as the Alabastine and consists of nearly a quarter section of land on which there is a perpendicular ledge of 100'.

An assay of the gypsum by a local assayer shows 99.5 per cent pure gypsum or calcium sulphate.

The company proposes to put in a mill at Venice, where the water power to run the machinery can be secured. There is a sufficient fall in the stream there to furnish power for the plant. It is also intended to run a tramway from the ledge to the town for the conveying of the raw material.

### Organizing Another Company.

OTTUMWA, IA., April 10.—George A. Clarke, president of the Red Canyon Stucco Company, has been in this city for some time interesting investors in the proposition of building a plaster mill in South Dakota. No site has been purchased, though the gypsum deposits in the Black Hills are being investigated.

### The Pioneer Plastering Company.

ST. PAUL, MINN., April 7.—The Pioneer Plastering Company has been organized and incorporated for \$25,000. This concern will engage in the plastering business and will do ornamental and composition work. The officers of the company are: C. P. Stine, president and general manager; J. J. Cullen, vice-president, and T. C. Caulfield, secretary and treasurer. The officers of the company are at 21 West Third Street.

### Increasing Capacity.

NAPOLEON, OHIO, April 12.—M. E. Loose, the manager of the Napoleon Pulp Plaster Company, is making preparations for a big year in the plaster business. A number of carpenters and millwrights are now at work increasing the capacity of the plant, putting in large bins and placing in position a carload of new machinery. It is the intention of Mr. Loose to manufacture two brands of plaster, the Elastic pulp plaster and a new brand to be known as Napoleon wood fiber plaster.

# CEMENT

## Fifty-Cent Cement.

If you had a picture drawn of Messina after the earthquake struck, you would have a perfect diagram of what will happen to the cement industry if the demoralization attendant to the actions of men who are too selfish to endeavor to bring about conditions that would improve their lot with those connected with the industry.

There are some gentlemen in the industry who are long on conversation, and when they talk about selling cement for 50¢ at the mill the whole season, it means ruination to a large number of the manufacturers in the industry, and that does not do anybody any good. It means an uneasiness on the part of the retailer, in spite of the fact that he may be benefited by speculation for a time. In the long run he is worse off than if he had a steady market price, and both he and the manufacturer were making a fair profit. Again, when a manufacturer is selling the output for less than cost, it is a great temptation to make poor goods.

It is often necessary to let out a chemist or some practical man in a cement mill, who has been responsible for the quality of the goods, and then the boss says, "I cannot stand this ten, twenty, thirty or even forty per cent loss. Either I must shut my mill down and stand for the overhead charges and practically not be able to furnish my customers, or run the plant half time, with reduced force, and get just as much as I can out of it." He overlooks all about the quality which his brand has always stood for, and that means he is fanning a crater which will ultimately be his destruction."

## AT PHILADELPHIA.

### The Cement Manufacturers Hold Regular Meeting—Discuss Conditions and Fraternize.

The quarterly meeting of the Association of American Portland Cement Manufacturers was held at the Bellevue-Stratford Hotel, Philadelphia, Pa., April 13, 14 and 15.

The usual executive committee meeting was held on Monday evening, and that as well as the other sessions was presided over by Vice-President Edward M. Hagar, of Chicago. President John B. Lober was absent, having been visiting at the Pacific Coast.

The representation from the various manufacturing sections was less than usual.

#### THE ATTENDANCE.

Ackerman, Marion S., Lawrence Cement Company of Pennsylvania, Plainfield, N. J.  
Aflack, B. F., Universal Portland Cement Company, Chicago, Ill.  
Barr, T. G., Vulcanite Portland Cement Company, New York, N. Y.  
Bartlett, G. S., Western Portland Cement Company, Milwaukee, Wis.  
Bayle, George F., Glen Falls Portland Cement Company, Glens Falls, N. Y.  
Beach, William N., Pennsylvania Cement Company, New York, N. Y.  
Beery, P. B., Sandusky Portland Cement Company, Sandusky, O.  
Bonner, Robert E., Pennsylvania Cement Company, New York, N. Y.  
Breerwood, Charles H., Coplay Cement Manufacturing Company, Philadelphia, Pa.  
Boettcher, Charles, Portland Cement Company, Denver, Col.  
Brobstom, Joseph, Dexter Portland Cement Company, Nazareth, Pa.  
Bye, Charles, Charles Warner Company, Wilmington, Del.  
Collins, Justus, Superior Portland Cement Company, Cincinnati, O.  
Cox, Charles H., Penn-Allen Portland Cement Company, Philadelphia, Pa.  
Crock, Charles, Fairmont Coal Company, Reading, Pa.  
Camm, C. M., American Cement Company, Philadelphia, Pa.  
Corbett, W. P., Alsen's American Portland Cement Works, New York, N. Y.  
Dumary, T. H., Helderberg Cement Company, Albany, N. Y.  
Dunn, W. B., Vulcanite Portland Cement Company, Phillipsburg, N. J.  
Durnell, J. L., Charles Warner Company, Philadelphia, Pa.  
Erdell, W. E., Penn-Allen Portland Cement Company, Allentown, Pa.  
Emrich, Victor, Raymond Brothers Impact Pulverizer Company, Chicago, Ill.  
Fetter, H. M., William G. Hartranft Cement Company, Philadelphia, Pa.  
Ford, William, William G. Hartranft Cement Company, Montreal, Can.

Franks, F. B., Bath, Pa.  
Fraser, Norman D., Chicago Portland Cement Company, Chicago, Ill.  
Gerstell, A. F., Alpha Portland Cement Company, Easton, Pa.  
Green, H. B., Whitehall Portland Cement Company, Philadelphia, Pa.  
Griffith, R. E., American Cement Company, Philadelphia, Pa.  
Hagar, E. M., Universal Portland Cement Company, Chicago, Ill.  
Harding, W. H., Coplay Cement Manufacturing Company, Philadelphia, Pa.  
Hoover, D. S., Alma Cement Company, Wellston, O.  
Israel, Abraham, Coplay Cement Manufacturing Company, Philadelphia, Pa.  
Kelley, R. W., Virginia Portland Cement Company, New York, N. Y.  
Kent, W. C., Whitehall Portland Cement Company, Philadelphia, Pa.  
Kimb, H. G., Kent Mill Company, New York, N. Y.  
Kittrell, J. W., Catskill Cement Company, Cementon, N. Y.  
Lincoln, S. Dana, National Mortar Company, Washington, D. C.  
Lazell, E. W., Charles Warner Company, Wilmington, Del.  
Mallory, W. S., Edison Portland Cement Company, Stewartsville, N. J.  
McDaniel, J. U. C., Chicago Portland Cement Company, Chicago, Ill.  
Metcalfe, Morris, Universal Portland Cement Company, Chicago, Ill.  
Meyer, E., Edison Portland Cement Company, New York, N. Y.  
Moyer, Albert, Berkshire White Portland Cement Company, New York, N. Y.  
Newcomer, Charles, F. L. Smith & Co., New York, N. Y.  
O'Neill, Col. C. T., Lehigh Portland Cement Company, Allentown, Pa.  
Paige, A. W., Nazareth Cement Company, New York, N. Y.  
Prentiss, W. J., Crescent Portland Cement Company, Pittsburgh, Pa.  
Rader, B. H., Universal Portland Cement Company, Pittsburgh, Pa.  
Reed, Lyman A., Diamond Portland Cement Company, Cleveland, O.  
Rianhard, Dane E., Virginia Portland Cement Company, Fordwick, Va.  
Ruggles, Charles A., Ruggles-Coles Company, New York, N. Y.  
Schaffer, H. A., Northampton Portland Cement Company, Stockertown, Pa.  
Setze, J. A., Northampton Portland Cement Company, New York, N. Y.  
Shove, J. W., Peninsular Portland Cement Company, Jackson, Mich.  
Sinclair, Robert S., Alsen's American Portland Cement Works, New York, N. Y.  
Stradiey, S. G. K., Penn-Allen Portland Cement Company, Allentown, Pa.  
Sunderland, L. T., Ash Grove Lime and Portland Cement Company, Kansas City, Mo.  
Sykes, George G., Lehigh Portland Cement Company, Allentown, Pa.  
Trexler, Harry C., Lehigh Portland Cement Company, Allentown, Pa.  
Turner, William, Phoenix Cement Company, Nazareth, Pa.  
Twamley, James F., Coplay Cement Manufacturing Company, Philadelphia, Pa.  
Warner, William, Charles Warner Company, Wilmington, Del.  
Warner, Harry B., Maryland Portland Cement Company, Baltimore, Md.  
Weaver, R. S., Lehigh Car, Wheel and Axle Works, Catasauqua, Pa.  
Wickes, E. D., Alma Cement Company, Wellston, Pa.  
Yeager, William R., Penn-Allen Portland Cement Company, Allentown, Pa.  
Young, E. M., Lehigh Portland Cement Company, Allentown, Pa.  
Zehnder, C. H., Alma Cement Company, New York, N. Y.

If there is ever a time when co-operation is needed and trade conferences should be held, it is during a period of short demand and close prices. The proposition that has been developed so carefully to bring about a standardization of values to the benefit of manufacturer, dealer and contractor, seems to have been laid on the back fence for a time. The persistency of some manufacturers who insist on filling up with orders when there is only a 50 per cent demand, no matter what they sell goods for, caused this. Factors East and West have agitated what was already a grievous condition, due to dull business and late spring.

ROCK PRODUCTS always has believed in the co-operation plan which allows the other fellow to keep his business at a fair price, that all parties may be benefited thereby. There are some factors in the cement business who think there is only one way to sell cement and that is to cut the price, and it would make a happy condition in the business if some of those operators who can stand the loss would go at it aggressively and just cut the life out of prices for sixty or ninety days. Then there would be more little boys coming home from school asking to be forgiven for their transgressions than ever before.

A price-cutting fight does not do anyone any good, unless it is conducted intelligently for some definite purpose. If the majority of the manufacturers of Portland cement had their way, there would be no fight, but a fair and reasonable price for cement adhered to strictly. This would do the manufacturer good, the retailer would know when to buy, and be less of a speculator, and the contractor who buys cement at \$1.50 a barrel and then finds, when he is ready to put it in the job it could

be purchased for \$1, would not have the nervous prostration which this price whirlwind brings about.

The reports from various committees at the meeting indicated careful preparation and aggressive effort by the committee men to work out their problems. The committee on new uses was particularly to be congratulated on their intelligent work of promotion of the business.

The second day's session was taken up with interesting reports and continued for several hours, after which everybody took a train for home. As usual, the manufacturers present were benefited by the attendance, but there should have been a full representation from all sections.

## LOBBY NOTES.

The salesmen's meeting was curtailed on Monday owing to the small number of the sales managers present.

Your "Uncle" William Prentiss of the Crescent Portland Cement Company, Pittsburg, Pa., reported the new plant is fast being completed at Wampum and he was in consultation with President Ruggles of the Ruggles-Coles Engineering Company, who are constructing the plant, as to details incident to the same. This plant will have a capacity of about 3,500 barrels. Cement has been produced at this point since the early '70's. The old Wampum mill was one of the first to manufacture Portland cement.

Kilns to be 250' long are being talked of as a possible future economy for the producers.

George S. Bartlett, of Milwaukee, Wis., was as entertaining as ever.

T. H. Dumary, of Albany, N. Y., reports that Northern New York will use its full quota of cement this year, if present indications mean anything.

Harding, of Philadelphia, had a serious time explaining patents and other things at the session. He was protected by Israel.

President Kelly, of the Virginia Portland, was in conversation with Ford and Superintendent Preston of the new Vulcan Company, of Montreal.

W. S. Mallory, of the Edison, reported a fair amount of sales considering they are running more than half capacity.

Col. Harry Trexler, president of the Lehigh Portland Cement Company, Allentown, Pa., ran in for a few hours on Tuesday enroute to Harrisburg.

The announcement was made by R. S. Weaver, of the Fuller mill, that their New York representative, William R. Hall, who for some years has been in attendance at all the cement meetings, had died suddenly some two weeks ago.

A. C. Horn, of New York, was seen in the lobby of the hotel during the evenings.

"Adonis" Kimble, as usual, was present, and was commented on as being part of the furniture of the association. It was not stated, however, whether he was a decoration or a "wobbler."

## Tests on Finely Ground Cement.

Kenneth Hartley, city engineer of Kansas City, Mo., is making some concrete tests which will be of benefit to engineers. He is at the present time making tests of cement to see whether the finer ground cement gives a greater strength than the coarser ground, and the result of his first test can be seen from the following letter which he wrote to the construction engineer of the Missouri Pacific Railway Company:

April 13, 1909.  
E. F. Mitchell, Engineer Construction, The Missouri Pacific Railway Company, St. Louis, Mo.

Dear Sir: Knowing that you are interested in the tests that I am making of the compressive strength of concrete, showing the relative value of different grades of material available in this district, I am going to report these results to you from time to time. The first series of tests are intended to show the relative value of cements of different degrees of fineness. Two sets of blocks were broken last Saturday, and I am reporting this at once, to convince you that I did not exaggerate the importance of this matter in speaking of it last week. I hope that when the tests are finished I can show a definite relation between fineness and strength, but these first results are mainly interesting as showing that the advantage of fine grinding is probably greater than was anticipated.

The greatest care has been used in making these test blocks to eliminate as far as possible all causes of variation except in the cement. All the materials are mixed by weight. The stone is used in three separate screened sizes. A weighed quantity of each size of stone and of sand and cement and water is taken for each batch of concrete. After thorough mixing this is placed simultaneously in three moulds. The test blocks are 4" x 4" x 8" high. In Batch No. 1 the fineness test gave 83 per cent through a 200-mesh sieve. Batch No. 2 the fineness test gave 75 per cent through a 200-mesh sieve. The average breaking load of blocks No. 1 was 36,900 pounds, or 2,300 pounds per square inch.

The average breaking load of blocks No. 2 was 31,350 pounds, or 1,960 pounds per square inch, showing the concrete in No. 1 to be 17.6 per cent stronger than No. 2. As the difference in fineness as measured by the 200-mesh sieve would only lead me to expect a difference

(Continued on page 55.)

# QUARRIES

## ROCK DRILLING.

### The Churn Driller Fills the Want for Deep Drilling in Quarries so that Large Blasts can be Made.

With the development of the crushed rock, cement and lime industry, has come the need for greater and better equipment in the plant and quarry to take care of this growth.

To increase production with the methods that were in vogue five years ago would take an enormous amount of capital, and require an organization too big to handle with profitable results.

In the past few years have come increased facilities which makes the capacities of plants much larger than were ever dreamed of, in the early days of the industry.

Until three years ago, the largest gyratory crusher was the type known as No. 9 and there were very few of them, as No. 8 was the type mostly used and even now very few plants have any larger sized crushers. From this has developed the No. 18 crusher, which is manufactured by the Power and Mining Machinery Company, and the largest that has, up to this time, been attempted.

With the increased capacity of the crusher has come the necessity for increase of feeding to secure the greatest efficiency and output. Unless a machine is running steadily and turning out the rock, it is unprofitable to operate it. Therefore, in order to keep the crusher loaded with stone, the quarry cars must be delivered more rapidly. Here comes the greatest item of expense, that of loading and delivering the cars for the labor account which enters into this cost must be considered, and it is a big item.

The steam shovel manufacturers have come to the quarrymen's aid and now the cars can be more economically and quickly loaded than by hand labor, which is the universal way. The steam shovels that are in constant use have proven the greatest investment for quarry work the large operator has ever made, and they are rapidly coming into use more and more.

The latest problem to confront the quarrymen is that of quarrying stone for the shovel—that is by keeping enough loosened rock for it to work on. The sand and gravel operators have found that by the shovel they can load cars very easily. In the pits where the sand is in the form of rock it is necessary to loosen it by blasting in order for the shovel to pick it up more easily.

In rock quarries where limestone is the material to be moved, greater effort has to be made in order to loosen the rock from the ledges. We have had the air and steam drills, but these limit the amount of stone to be moved on account of the small hole they drill.

The time that is consumed, the labor it requires, and the small amount of rock moved, make this an important item of expense to the large operator. To fill the necessity for a large machine to sink blast holes and cores, many quarrymen have adopted the churn drill for this purpose.

The Keystone Driller, manufactured by the Keystone Driller Company, of Beaver Falls, Pa., has been found to do the work required and a number are in use in various quarries. The Keystone driller has been used in quarry work for about eight years and it has proven most satisfactory for limestone, cement rock and sandstone.

These machines have been used to great advantage in the cement quarries of eastern Pennsylvania, New Jersey and New York. The large blast hole allows the use of a charge which breaks the rock up finer and leaves it in much better shape for the crusher.

Among the manufacturing concerns who have used machines with success are the following: The Edison Portland Cement Company, New Village, N. J.; G. W. Cumber Estate, Steelton, Pa.; Lehigh Portland Cement Company, Allentown, Pa.

The Keystone driller is very simply constructed and it is possible for a mechanic of average experience to take hold of it and learn to run it without much tutoring. At the same time it is true of drilling as of many other trades, that there is a



E. O. EYER, THE APOSTLE OF THE KEYSTONE DRILLER.

great difference between the novice and the expert drill man, and the results obtained by each. A man capable of running the machine can be secured for \$2 a day, but he will probably not get 20 per cent of the results obtained by an expert drill man at \$4 per day, while there is always a danger that he will break up the machine, lose the tools in the hole or get into trouble of various kinds. It is always an economical proposition to pay higher wages and secure an expert operator.

As to the durability of the machine, the life of the machine under a competent and efficient drill man should be at least ten years. Of course certain parts of it will wear out and have to be replaced and there is a possibility of breakage. An inexperienced drill man might seriously damage and wreck the machine in ten days' time, but when in the hands of an expert it should be good for ten years' solid drilling.

Drilling blast holes is precisely the same operation as drilling any other sort of a well, but the method of shooting differs for various sorts of blasting operations, and requires modification. Some rocks pulverize more easily than others, and others like that on the Detroit River comes out in large blocks.

One of the difficulties met with in operating machines of this character is that of starting a hole on the bare rock. The company has recently originated a device or attachment for steadyng the tools, which allows efficient work to be done from the start, even where the rock lies on a slant. Mr. Eyer of the Chicago office is the inventor of the attachment.

Inasmuch as speed of drilling is the principal thing to be desired, very much importance is attached to the weight of the tools which can be efficiently handled by a drilling machine. They claim for the Keystone that about twice as much weight of tools can be handled efficiently with the same power as on any other machine. This owing to the fact that the spudding shaft or walking beam counter-balances the drilling tools. The use of two spudding sheaves instead of one and the design of the machine preserve the drilling cable.

R. H. Horrell, driller in the quarries of the United States Crushed Stone Company, at McCook, Ill., kept the following record of drilling done by

him with a No. 3 machine. The holes drilled were 5 1/2" in diameter and were as follows:

	Hours.	Minutes.	Feet.
October 15	5	10	27
October 16	9	20	25
October 17	9	..	23
October 18	9	..	34
October 20	7	..	12
October 21	9	45	38
October 22	2	..	64
October 23	8	45	18
October 24	3	30	54
October 27	8	..	51
October 28	8	30	45
October 29	8	..	48
October 30	9	..	70
October 31	8	30	61
November 2	8	30	46
November 3	8	30	50
November 4	8	30	48
November 5	8	30	34
November 6	8	30	47
November 7	7	30	21
November 9	4	..	37
November 10	10	..	21
November 11	3	..	43
November 12	8	..	944
	189	..	944

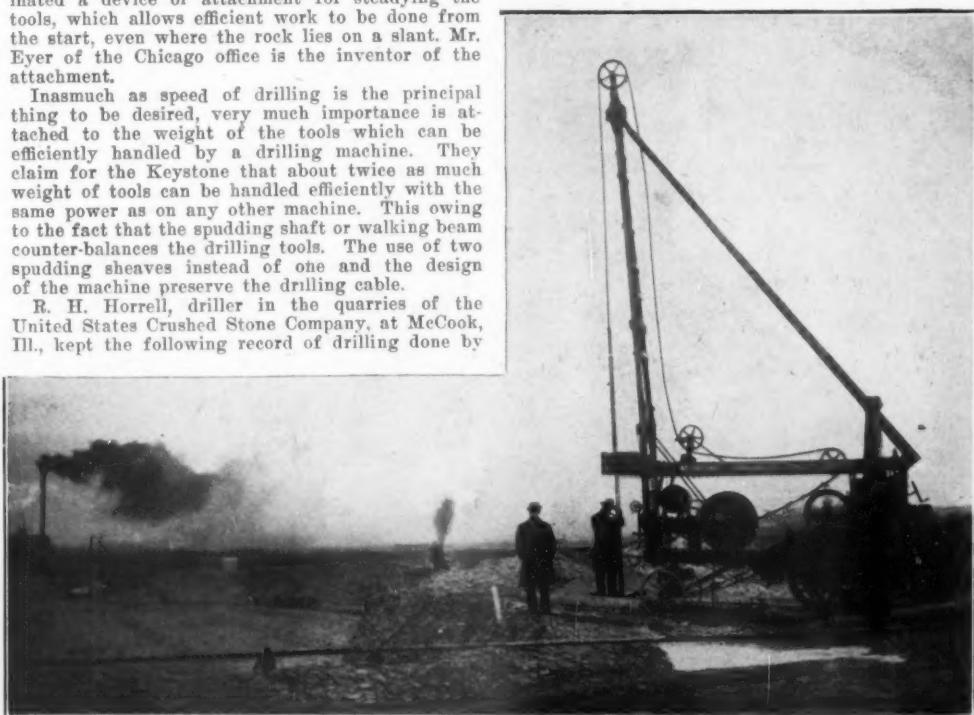
Dolese Brothers have a No. 4 machine in their quarry at Crusher, Okla. For a recent shot, they drilled five holes, fifteen feet apart and thirty feet from the face of the ledge. The holes were sunk 80'.

In hole number 1 they used 800 pounds of dynamite; in hole number 2, 1050 pounds of dynamite; in hole number 3, 1,000 pounds of dynamite; in hole number 4, 900 pounds, and in hole number 5 they used 800 pounds. The holes were filled solid to within 20' of the top. Each was tamped with a sixty-pound block of wood every foot. Rock screenings were well tamped on top of each hole. Two sets of battery wires were used in each hole. The stone here is of a flinty character and very hard. When the shot was made, the ledge was broken the entire distance to the bottom, and was lifted 15' high. The outer wall was not entirely broken but was cracked and was moved about 6' from the ledge. The charge was made by Mr. Dolese, who was much pleased with the results, though he did not use enough dynamite to give the greatest results. The wall can be further broken up by a few more blasts. It will be seen that a greater depth can be obtained, and a wider hole which, though it requires more dynamite per hole, will save the number of shots and move a greater amount of rock.

The United States Crushed Stone Company will move its machine to the Ives, Wis., quarry with the view of testing it for the equipment at that place.

James and A. C. O'Laughlin, of Chicago, have placed an order for a No. 3 machine equipped with a 10-h. p. motor for their Belleville quarry. This is the first machine to be run by electricity.

The Chicago office of the company is in charge of E. O. Eyer, and his headquarters are in the Monadnock Block. Mr. Eyer is an experienced operator with the Keystone Driller and has been very successful in his work with the machine.



THE KEYSTONE DRILLER OPERATING IN U. S. CRUSHED STONE COMPANY'S QUARRY AT LEMONT, ILL.

### Unfair Legislation Against Legitimate Business

Perhaps there is more rock crushing done in the state of Illinois than in any other. The reason for it is apparent. There is no state in the Union where the building of good roads is more sadly needed and has been more systematically neglected. It takes more crushed rock to maintain the roadbeds of railroads in Illinois than in many other states on account of the nature of the surface soils. There is scarcely a session of the Illinois legislature without a (Heaven-endowed!) lawmaker introducing a bill of some description providing for the convicts of the state to produce crushed rock. Just as if the rock crushing business had no standing and was unworthy of the consideration of the lawmakers of the vested interests of Illinois.

Rock crushing establishments have been established for several years at some of the Illinois penal institutions with a view to furnishing the output free to counties for the improvement of roads. The whole plan is impractical and it has worked just about as complete a failure for the purposes intended as such a thing could possibly result.

More than half of the crushed rock produced has to be paid to the railroads to settle the transportation bill for the balance of the output as road-making material for distant counties. This constitutes a snap for the railroads who get a very large percentage of the total output of the big crushing establishments without going into their pockets for a cent and they are able in many cases to purchase by the route of demurrage and other systems of accumulative charges, to condemn the rock that is shipped for county use and apply it to their own uses.

It is simple enough for the railroads to have the rock arrive at a rural siding when the roads are in such bad condition that the farmers refuse to use their teams to haul the rock. Day after day that car of rock lays on the siding accumulating charges until at last it is forfeited to the railroad and thus the railroad not only gets the ballast that was paid for transporting such a car, but in the long run they get the car itself. This is just one of the ways that the intention of the lawmakers is defeated, and in spite of the investment, the roads get but a very small fraction of the output of the convicts' labor. There is ever present a temptation on the part of the wardens of the penitentiaries to enter the open market with prison-produced crushed rock. In fact, there is very little difficulty at any time to secure a quotation on any amount and any size of crushed rock that a purchaser may see fit to specify and ask for the quotation. This again defeats the purpose of the state's investment, and brings the state itself with prison-made goods into direct competition with heavy tax payers who are extensive employers of labor and whose industry is entitled to the same protection as that of every important and active manufacturing interest that contributes through its taxes to the support of the state.

Perhaps the railroads of this state need such contributions. At least they are in a position to use the money and doubtless it is good business for the wardens of the penitentiaries to make a good showing of their stewardship. Clearly it is unfair to the tax payers of the state for the lawmakers to burden them with the support of a manufacturing establishment whose output is practically donated to the most notorious tax dodgers of all the ages to use, say nothing of the unfair competition that it makes with legitimate business investments which is really an important item in the industries of the state.

### Large Companies Consolidate.

NASHVILLE, TENN., April 13.—The Foster & Creighton Company, of this city, and the Gould Construction Company, of Louisville, Ky., have consolidated and will henceforth be known as the Foster-Creighton-Gould Company, of Nashville, Tenn.

The consolidation of these two well-known and reliable concerns is for general contracting and steel construction, and for the operating of quarries at Newsoms Station, Columbia, Tenn., and Rockwood, Ala.

The entire equipment of the company for the production of crushed stone, for all purposes, and rough and sawed dimension stone, cannot be excelled by any company in the South.

The dimension stone business will be handled as heretofore, through their Sheffield, Ala., office, and all business pertaining to same should be addressed there.

All other business of the company will be handled from the main office, Nashville, Tenn.

### Up-to-Date Plant Nearly Completed.

LIMA, O., April 15.—Last August E. W. Hiner and T. N. Cunningham purchased some twenty acres of land on the banks of the Ottawa River, where it is crossed by East North Street. The Hiner Stone Company was formed, and in October work was commenced on a plant, which is now practically completed and which, as it stands, is one of the finest and most complete in the Middle West. George Cunningham, erecting engineer for the Power and Mining Machine Company, of Cudahay, Wis., has been here for months past, superintending and overseeing the workmen who are installing the machinery, and he will remain until the last pulley is placed and the whole machinery set in motion. The outfit as it stands today represents an outlay of \$40,000.

Some time since permission was given the company to place a spur from the D. T. & I. tracks back to their quarry, so that the product could be easily shipped out of town. With this exit, the building stone, and the crushed stone can be shipped to all parts of the country after being loaded right in the plant and so quickly is this done that from 25 to 30 cars can be loaded in one day of ten hours. The actual output of the machinery as it stands is 750 cubic yards in ten hours, and if necessary a night shift will also be put on to care for increased trade.

The building enclosing the magnificent machinery has three immense concrete piers, which are reinforced by steel frames, and which are placed beneath the ground to the rock foundation, a distance of thirteen feet, while they rise above the ground only sixteen feet. These run the entire length of the building and are necessary to support the great weight of the various pieces of heavy iron machinery. This is covered by a wooden building 80' high.

At the top of this is placed the screen for the separation of the crushed stone. This is 18' in length and 48" in diameter. It also has a dust jacket and all the stone crushed passes through this down to the bins below, which have a capacity of 3,000 cubic yards.

The motive power is electricity and two great motors are found on the ground floor. One of these is of 75 h. p., and operates the heavy band and pulleys which hoist the stone in the 78' elevator to the crushers. The other is 55 h. p., and furnishes the power by which the stone is crushed and made ready for the roadways and other purposes for which it is used.

There are three crushers. They will be kept operating constantly and the stone is brought from the quarry in cars, one every minute. The building stone is separated from the other below and brought up in separate cars, thence transferred to the railroad cars, which are backed into the building, and filled with the utmost rapidity.

The entire building is well lighted with arc lights, so that the work can continue by night as well as by day, and the plant is one of the most complete in Ohio.

### To Test Crushed Stone.

MENOMINEE, MICH., April 10.—Robert Rick, the well known proprietor of the Menominee stone crushing plant, is arranging for a big "stone tournament" to be held in this city.

Proprietors and managers of every quarry in this section of the country will be invited to send a generous sample of their stone to Menominee for inspection. Not only is it expected that the quarries in this immediate vicinity will be entered but Mr. Rick expects to have stone shipped here from as far south as Milwaukee.

A brick tester will be installed on the bay shore, behind the National Hotel, and a competent committee will be named to inspect the work. The city council and other city officials will be invited to attend.

Mr. Rick's purpose is to determine for the city and himself where the best stone in this vicinity can be procured.

### New Stone Company.

A. G. Mercer and George E. Mercer, Bowling Green, O., have formed a partnership for the purpose of quarrying building stone and crushing stone for ballast and road building purposes. They will operate the Mercer quarries just west of the Bowling Green fair grounds.

George Mercer will continue his road building business and retain his interest in the Mercer Cement Block Company independent of his connection with the Mercer Stone Company.

The Hallman crusher plant near Mt. Carroll, O., has a number of machinists at work overhauling the machinery to prepare for an order for 13,000 tons of crushed stone.

### Death of Mr. Henry Watson

Henry Watson, of Alton, Ill., aged 73, died at his home in Alton, on April 2. The funeral was held on Sunday, April 4, and was attended by a host of friends, which he had made during his long residence in the western Illinois city. He has occupied many positions of public trust and was beloved for his private charities. He leaves a wife and five grown children, one son and four daughters.

About forty-two years ago Henry Watson set up the first machine for crushing rock with a gyratory crusher. P. W. Gates personally attended to the installation of this machine, some parts of which are still at the old plant at Alton. Being the first gyratory built, it was never numbered, but its measurements would indicate it was about a No. 6. Previous to this improvement, Mr. Watson had acquired his extensive quarry properties near Alton. He had used a jaw crusher to some extent and by reason of his increased output with the first gyratory crusher he secured the contract to ballast the Chicago and Alton Railroad Company's roadbed. A short time ago in conversation with Mr. Watson, he referred to this first big ballast contract, saying that it was the most profitable contract he had ever had.

While the price of crushed rock in those days ranged from 40 to 60¢ per cubic yard, the labor conditions were very different from what they are now, so that the work in the quarry was cheaper, making the business more profitable. He has never been in any other business but that of crushing rock and has always been prominent as a road contractor and has shipped a very large percentage of the tonnage originating at Alton. As a result of his good business judgment he has amassed a comfortable fortune.

The social side of his nature was highly developed. He was known as a good mixer, always having a pleasant word and a cheerful disposition when in contact with his associates in the business world.

A number of years ago he became a charter member of the Rock Products social club, of St. Louis, which is made up of the operators who furnish crushed rock to that important market. He has always been a member and seldom absent from any of its meetings. At a called meeting of this organization the following resolutions of remembrance and respect were passed:

ST. LOUIS, Mo., April 13, 1909.  
WHEREAS, Our friend and brother, Henry Watson, the vice-president of this club, after a life extending beyond the three score years and ten, was, on the second instant, removed from among us by the hand of death; and,

WHEREAS, His interest in the welfare and success of this club was manifested at all times, and was newly evidenced only a few days before his death by his particular inquiries as to who attended our March meeting, and the proceedings of same, and by his expressed hope and trust that our future action, whatever it might be, would contribute to the benefit of the members of the club, and tend towards the permanency of our organization. Feeling, therefore, that we have lost a loyal member and a faithful friend, we are glad to know that when he realized the end was near he had the courage to say that he had lived his life and his work was done.

Resolved, That the above expressions of the sentiments of this club be spread in full upon the records thereof, and a copy of same signed by our president and secretary be sent to the family of Mr. Watson, and a copy be forwarded to Rock Products with a request that same be published in its next issue.

Resolved, That we tender to his wife and family our sincere sympathy, together with the assurance of our love and respect for his memory.

H. C. BARNARD, President.

R. E. MCLEAN, Secretary.

### Awarded Large Contract.

The road commission of Black Mountain Township has contracted with the French Broad Quarry Company, Asheville, N. C., to furnish ten thousand tons of crushed stone to be used in macadamizing the roads of the township, which are being improved with the proceeds of the \$25,000 bonds voted by this progressive township for road building. The stone will be gotten out at the quarry at the old Atkinson place near Smith's bridge and shipped on cars to Black Mountain station, where it will be received by the agents of the commission.

The quarry company has also closed a contract for furnishing stone for the reinforced concrete to be used in the new Oates Building.

### Prospects Bright for Stone Crushing.

LE ROY, N. Y., April 10.—It now looks as if the present season would be a good one for the stone quarry business about Le Roy. The large plants of the General Crushed Stone Company and the Empire Limestone Company are preparing for a large output of stone. The latter plant was closed down recently to permit of repairs and improvements. A new crusher was installed which has a capacity of double that of the present one, being about 2,000 tons of stone a day.

## ROCK PRODUCTS

### The Effect of Automobiles on Macadam Roads.

[Read by Logan Waller Page before the Buffalo Legislative and Good Roads Convention.]

Although the methods of construction of broken stone roads vary somewhat in different countries and different localities, the main object sought has always been the same—to withstand the wear of iron-tired horse vehicles at a reasonable cost. Until the last decade these conditions have been successfully met, and the broken-stone road was all that could be desired. Under modern motor traffic, however, the conditions have changed. Roads which formerly withstood the wear of horse vehicles are now quickly denuded of the fine binding material, and become loose and disintegrated. On the principally traveled roads the great clouds of dust raised by rapidly moving motor vehicles are not only a great waste of the material of which the road is composed but this dust is carried by the wind and disseminated over adjacent property to such an extent that it has, in many instances, affected the value of real estate as well as the comfort of nearby residents and pedestrians. The road surface becomes so loosened that water makes its way to the foundation, and in general the cost of maintenance has very greatly increased. With a constantly increasing motor traffic these are, briefly, the conditions we find today, and which have to be met. The problem is such a serious one that it has called forth the best efforts of highway engineers in every civilized country. By the proper use of bituminous materials the mechanical difficulties have, in a large measure, been overcome, but the cost of such treatment is so great that it is hard to believe at present that such methods can ever be generally used on the many thousand miles of rural highways affected.

As already stated, the broken-stone road has been developed to withstand the wear of iron-tired horse vehicles, and has met successively the demands of suburban and rural traffic until the advent of the motor vehicle. When in its highest state of perfection the rock from which such a road is made is so suited to the volume and character of traffic which passes over it that the amount of dust worn off is only sufficient to replace that removed by wind and rain. The dust remaining should be just enough to bond the surface stones thoroughly, forming a smooth, impervious shell. A road of this character wears uniformly under the traffic for which it was designed, and when properly maintained always presents an even surface.

When such a road is subjected to continuous fast motor traffic entirely new conditions are brought about. Since the advent of this new traffic its effect on the road has been the subject of much study by both highway and mechanical engineers, and many highly interesting and ingenious theories have been advanced to account for the injury to roads derived from it. While the slipping of the tire, skidding, shape of car body, suction and other causes contribute more or less to the injury of the road surface, I think it is quite generally agreed that the suction of the pneumatic tire on the surface is the main cause of the trouble. The object of this paper is to show, however, that the great tractive force or shear exerted by the driving wheels of motor cars is the main factor of injury.

It has been demonstrated by connecting both front and rear wheels of motor cars with separate speedometers that there is a considerable amount of slipping of the driving wheels on the road surface, and, on account of the numerous irregularities on the average road surface, this is what should be expected. This slip, due to the decrease in the bearing surface of the tire, undoubtedly increases the amount of finely divided material of the road surface thrown into the air. The increased amount of damage done on this account will be in proportion to the irregularities in the road and the speed of the car. While it is an important factor, its effect is greatly reduced if the road has a smooth surface.

The effect of skidding is only observable on roads that are subjected to a considerable volume of fast motor traffic, and only then on curves. The result of this is to shift the crown of the road tangentially to the gutter. While very annoying to those having the maintenance of such roads, it is not one of the serious or costly causes of injury, as it is generally confined to rather sharp curves.

It is my belief that too much stress has been laid upon the effect of the car body and its shape in removing dust from the road surface. After a number of experiments and observations I am now convinced that little or no dust is removed from the road surface by this means, except on very dusty roads. The dust lifted by the wheels, however, is greatly accelerated by the action of the car body and the air currents set up in its rear, which has much to do with the dissemination of dust. This is one of the important factors to be considered, as much of the dust

lifted by the wheels would not be carried from the road but for the air currents developed by the car body, and these, of course, are much affected by its shape.

Probably no single factor has been considered of as much importance as the so-called suction of the pneumatic tire. Some writers have even gone so far as to maintain that a slight vacuum is created in the rear of each tire, which is sufficient to lift the finer particles of the road surface in the air. In my opinion, entirely too much importance has been given to this phenomenon, for, if it exists at all, its effect is probably so slight that it can be considered a negligible quantity, and I shall endeavor later on to give my reasons for this view.

Beyond a doubt the most injurious action of motor traffic is the great tractive or shearing force exerted by the driving wheels of these cars. The fine dust which ordinarily acts as a cementing agent to the road surface is thrown into the air, to be carried off by the wind, or that remaining on the road is so loosened that it is easily washed into the gutters by rain. The pneumatic rubber tire wears off from the broken stone of the road little or no dust to replace that thus removed, and the result is that the stones become loose and rounded, giving the greatest resistance to traction and allowing water to make its way freely to the foundation of the road.

For the purpose of studying this phenomenon I recently conducted a series of tests with motor cars of various shapes and sizes, from the 4,000-pound limousine to the small runabout. These cars were run at various rates of speed, and their effect studied on a section of average broken-stone road. The most interesting result was obtained with a 60-horsepower car stripped for racing. The wheels of this car were 36 inches in diameter, with 4-inch front tires and 4½-inch rear tires. The weight of the car, with driver and mechanism, was 2,800 pounds. This car was driven over a level section of broken stone road at speeds varying from five miles an hour to sixty miles an hour. The road used was a section of a Government road which had been resurfaced two years previous to the test and was in very good condition. Up to fifteen miles an hour little or no effect was produced on the road, and even at twenty miles an hour it was judged by those present that no serious damage was done. From twenty miles an hour on, however, the effect was markedly noticeable with each increase in speed. At a point on the road designated for the proper speeds, photographers with the necessary high-speed cameras were stationed for the purpose of taking photographs from different points of view of the effect produced. These photographs, I think, illustrate the action of the wheels very clearly. They show the car traveling at various rates of speed from five miles an hour to sixty miles an hour.

The chief point of interest in these photographs is the difference in effect on the road between the front and rear wheels. Now if it is true, as has been claimed, that a vacuum is formed in the rear of the pneumatic tire, or that it possesses any power of suction, this should be equally true of both front and rear wheels. I am convinced, after most careful observation, that this is not the case, and I think this point is illustrated by the photographs.

To sum the matter up briefly, the pneumatic tire or any type of tire which propels a vehicle must have sufficient tractive resistance to overcome the load of the vehicle. This of necessity must cause a shear on the road surface, which varies with the weight and speed of the vehicle. The broken-stone road surface has little power to resist a shearing stress; consequently the fine material of which it is composed is thrown into the air. Once lifted from the road, this fine material is subject to the effect of air currents generated by the car body, and subsequently by the wind. In this manner large quantities of the material of which the road is composed are carried from the road and must eventually be replaced, or the road will rapidly deteriorate. This action may be greatly accelerated by other causes, but in the main it is sufficient to account for the observed results. Aside from the dust carried from the road in this manner, this shearing force of the motor car has a decided disintegrating effect on the surface of the road.

### Monon, Ind., Plant Changes Hands.

Edward Hely, of Cape Girardeau, Mo., has sold his crushing plant at Monon, Ind., to Herman H. Evans, of Lafayette, Ind. Mr. Evans will move and reset the plant and spend about \$10,000 on fixing it up, when he will have a good plant of 500 yards capacity. It will be operated as the Monon Crushed Stone Company. Mr. Hely, who now has a No. 8 plant at Cape Girardeau, will build another No. 8 plant to supply the stone, for making cement, to the Cape Girardeau Portland Cement Company, who are building adjoining this quarry.

### Form New Company.

Chas. M. Edson, cashier of the Dollar Savings Bank and Trust Company, of Toledo, O.; A. Q. Thacher, head of the A. Q. Thacher & Co., submarine contractors and divers, of Toledo, O., and Gus. F. Smith, president of the Smith-Thacher Quarry Company, of Maybelle, Mich., are the principal stockholders of a company known as the Michigan Rock Products Company, and have purchased the property known as the Ida quarries about two miles west of Ida, Mich., on the Lake Shore Railroad, consisting of nearly two hundred acres of first-class quarry lands.

The crushing plant and lime kilns and all other improvements upon the property will be put in first-class operating condition as soon as money and push will do it. Additional machinery will be installed. The products will be lime and lime specialties, ground limestone for fertilizing purposes, flux stone for furnaces, dolomite or physic stone, crushed granite boulders, crushed limestone, and various other stone products.

The personnel of this organization insures the necessary push and capital to make this one of the great producers of stone products in Michigan.

Gus. F. Smith, who has been long known as a mining engineer and a pioneer in the stone business for years in Michigan, and one who has made many improvements in stone producing machinery, will have the immediate charge of the installing of the new machinery and operating of this plant, as well as to continue the operating of the plant near Maybelle, Mich., known as the Smith-Thacher Quarry Company.

Address all communications to the Michigan Rock Products Company, Ida, Mich., care of R. F. D.

### The Lewisburg Stone Company.

LIMA, O., April 10.—Joseph Patterson, Allan Patterson and Victor Hammond, associated with E. T. Paul and E. R. Bissell, have bought the property, 125 acres of land, and plant of the Lewisburg Stone Company, the purchase price being \$100,000, and for that amount a new company has been formed, to be known as the Lewisburg Stone Company. The plant, which is located in Preble County, between Cincinnati and Dayton, on the Cincinnati Northern and Big Four railroads, is the largest stone-crushing plant in the world.

The officers of the new company are Joseph Patterson, president; Victor Hammond, vice-president; Allan Patterson, secretary and treasurer. These gentlemen with Mr. Paul and Mr. Bissell constitute the board of directors.

The personnel of the organization and the splendid success of the Bluffton Stone Company, in which the Pattersons and Mr. Hammond have been the moving spirits, is a guarantee that the new enterprise will be an important addition to Lewisburg and southwestern Ohio. They are all men of the highest integrity and business ability, and their advent into the commercial life of these sections will prove of mutual benefit to all parties concerned.

### Contract for Stone Crushing Plant Awarded.

The Connellsburg Iron Works has been awarded the contract for the construction of a new stone crushing plant to be built for the Monongahela Stone, Clay and Brick Company, at Cool Spring, Pa., at a cost of from \$10,000 to \$15,000. Work has been commenced.

The plant will consist of the buildings which will be sheathed with steel, motors, screens, crushers, an elevator and air compressors. It is to be ready for operation about May 15 and will give employment to a considerable force of men.

The output of the plant will consist of paving and building stone, silica sand for glass factories and railway ballast, and clays for general purposes.

### Stone Crusher Arrives.

MARINETTE, WIS., April 14.—The big stone crusher purchased by the Menominee County road commission during the winter has arrived and is being unloaded at the Northwestern freight station. The several patent dump wagons ordered at the same time have also arrived and are now being prepared for service.

The stone crusher is one of the most complete that has been used in local work and is of an improved pattern. It will do work that the other styles and designs could not begin to do and will in every way fill the bill for county road work.

The road crews are hard at work at the present time getting their equipment ready for an early start. It is expected that road building can be started the first of next month. A total of \$20,000 will be spent by the road commission during the present summer.

### The Use of Steam Shovels in Quarries.

The use of steam shovels in stripping quarries and also for handling blasted rock has become an important subject among not only large producers, but also the smaller ones.

It has been found that the use of this type of machinery for these purposes has greatly cheapened the output and in a measure solved the labor problem. It has been found that with the use of a steam shovel stripping of quarries can be done at a very small cost, as compared with hand labor or team. The depth of stripping can be from two to twenty feet and found profitable with the use of a steam shovel.

When the stripping is from two to five feet deep, it has been found practical to cast over for two or three cuts and then load into cars, carts or wagons. In shallow stripping this practice has been found very profitable.

Where stripping is of a greater depth the material is loaded direct as the shovel digs it.

It has been found that stripping with a steam shovel under ordinary conditions can be done at a cost of from three to five cents per cubic yard, while by team or hand work, the cost is more than twice the amount.

Troubles with labor are eliminated and a steam shovel works "rain or shine." Where the stripping is not overly deep, say from two to ten feet, enough stripping can be done during the winter months to carry quarrying on through the balance of the season. After the stripping is over the same shovel can be put into the quarry for use in handling blasted rock, loading it into the cars that transport it to the crusher plant.

Where the rock is shot up sufficiently fine to pass through a No. 6 or 8 crusher it has been demonstrated that the steam shovel will do the work of loading fully as cheap as it will in the stripping.

The National Lime and Stone Company, of Carey, Ohio, uses a Vulcan shovel in its quarry for loading cars, and has found the steam shovel to be a very economical means of moving rock.

### Purchases Stone Crusher Plant.

Joseph Dunfee, Syracuse, N. Y., recently purchased the Lockport Stone and Brick Company's plant at Lockport, N. Y., for \$35,000.

Mr. Dunfee has purchased, in connection with the plant, thirteen acres of crushed stone, containing 4,000,000 yards of stone. The ownership of the plant has been in litigation for about five years and has been idle during that time. The plant and machinery are in good condition, however, and Mr. Dunfee will put it in operation immediately.

Much of the output of the plant Mr. Dunfee will use in his own business. He is building a breakwater and three state roads about Buffalo, and uses a large amount of crushed stone. He will work the plant to its full capacity, however, and will be able to dispose of considerable crushed stone, for which there is a great demand at present.

### Incorporation.

The Stone Products Company, Trenton, N. J.; to quarry clay, stone, cement, sand, lime, etc.; capital stock, \$200,000; incorporators, John A. Montgomery, W. Bradford Stryker and Robert T. Willits.

### New Company Formed.

CAPE GIRARDEAU, Mo., April 13.—Articles of incorporation were filed recently for the Rock Products Company, with a capital stock of \$50,000, paid up. The incorporators and directors of the company are J. H. Himmelberger, George McBride, Jared L. Johnson and C. J. Crawford.

About a year ago Mr. Crawford acquired from Louis Houck and the Cape Girardeau and Thebes Terminal Railroad Company nearly a mile of river front just above Gray's Point, embracing the tracts known as the Albert lime kiln property and the Sturdivant quarries, and this company has been formed to develop these deposits of pure limestone.

As the name would indicate, the company will engage in the various lines of limestone products. As is well known, this is the last of the limestone bluffs in the valley of the Mississippi from here to its mouth in the Gulf of Mexico, which should certainly give the quarries great advantage in furnishing government contracts for river improvements.

The work can be carried on at any stage of the river, as the channel washes these rocky bluffs at this point. The company will also be well supplied with railroad facilities, as the Cotton Belt line to Gray's Point now ends at the company's property, and side track connections will be immediately made with that road. This property is also on the projected line of the Cape Girardeau and Thebes Terminal Railroad to the Thebes bridge, the right of way of which railroad has been already blasted along these rocky bluffs.

The Rock Products Company has also acquired the Cape Girardeau Stone Company, owned by Mr. Himmelberger, and will at once move this plant to the new point.

A crushing plant of 350 tons per day will be installed and also a limestone grinding plant, which will furnish limestone for fertilizing purposes, glass flux and sugar manufacturing and cement block grits.

The company will also install as soon as possible modern lime kilns of the gas producer type of about 400 barrels per day capacity, and a lime hydrating plant in connection.

This white limestone is 99.5 per cent lime carbonate.

The farmers of Southeast Missouri will now be able to obtain limestone for neutralizing or fertilizing the "sour soils" in the wet spots on their farms.

Ground limestone is being used with great success by Illinois farmers for "sour" lands, which is being furnished by the quarrymen of the state.

Mr. Johnson, who will be manager of the company, is an experienced lime and material man; Mr. Miller, superintendent of the Cape Girardeau Stone Company, will continue in a like capacity with the new company.

The Rock Products Company certainly has bright prospects for success.

### Purchase Large Stone Quarry.

WAYNESBORO, Pa., April 10.—Edward Hess, the well known Antrim farmer, has purchased a tract of land from the Brandon Realty Company, at the south end of Chambersburg, and will open a large stone quarry there, with a complete stone crushing outfit.

### Receives Large Contract.

Samuel Kelso, of Shippensburg, Pa., has been awarded the contract for the crushed and uncrushed stone for the concrete work in the erection of bridges and culverts through Shippensburg, on the connection of the Philadelphia & Reading Railroad with the Western Maryland Railroad at that place. It is supposed that it will take nearly 4,000 tons of stone.

### Start Stone Crusher.

The stone crusher in the plant of the Thomasville Stone and Lime Company, of Thomasville, Pa., started recently with bright prospects for a busy season. They not only crush stone for their own use but furnish a great deal to the railroads for ballast.

### Awarded Contract for Crushed Stone.

James L. Freeman, of Sinking Spring, Pa., was recently awarded the contract for crushed stone to be used on the Berks and Dauphin turnpike from the Wyomissing borough limit to Warnersville. The contract price was \$1.20 per ton.

### Stone Contract Awarded.

The contract for supplying the city of Summit, N. J., with 4,000 tons of crushed stone for road use was recently awarded by the common council to the Larson Traprock Company, of Springfield. This company's prices for stone, delivered in any part of the city, were for one-half-inch size, \$1.25; one inch, \$1.20; one and one-half inch, \$1.15; two inch, \$1.05.

### Transporting Rock for Government Jetties.

James Griffith, of the Coastwise Steamship and Barge Company, Seattle, Wash., has a large contract for transporting rock from Puget Sound to the Government jetty at Gray's Harbor. He now has several large barges ready for the work, and will begin about the middle of the month. The contract is expected to take several years.

### Drawings From the Kilns.

Ozark White Lime Company, Fayetteville, Ark., report that prospects are much better for business in 1909, though freight rates are terribly illustrated at present.

The Tontitown Lime Company, Tontitown, Ark., say they expect to add two more kilns, and that the outlook for business in 1909 is fine.

Puntenney Lime Company, Los Angeles, Cal., write us that the outlook for 1909 is exceedingly good.

Stearns Lime Company, Danbury, Conn., report the outlook very encouraging. They expect to erect a stone crushing and milling plant, and will make a specialty of agricultural lime.

Bethlehem Lime & Stone Co., S. R. Chapman, manager, Bethlehem, Pa., say that while they are not contemplating any improvements at present they expect a good year's business.

M. E. Reeder, Muncy, Pa., says they have two kilns under construction and will build four more during the summer of 1909, and further state that the business outlook was never better.

A. Courchesne, El Paso, Tex., states that the prospects for the coming year are very fair.

E. Dillon's Sons, Indian Rock, Va., report that they are installing a No. 4 Austin crusher for furnace flux and railroad ballast.

Tacoma & Roche Lime Company, Roche Harbor, Wash., state that, while they do not expect to make any improvements in the near future, that the outlook for 1909 is very promising.

Oreas Lime Company, Deer Harbor, Wash., expect to add another kiln to their plant and also say that they are not quite satisfied with the market.

D. Y. Huddleston, Fort Spring, W. Va., report that they expect to construct in the near future, a gas-fired kiln, and also say that at the present time the outlook for trade in 1909 is rather gloomy.

Knott & Moler, Washington, D. C., say that conditions point to a very prosperous year.

Clearwater Lime Company, Ltd., Orofino, Ida., expect to install a new hydrating plant in the near future, and are preparing for a good business season.

Frank Heitman, Dubuque, Ia., says that business is not very good at present.

Vermont Lime Company, Shermans, Vt., are now building two large kilns. They say the business outlook for 1909 is exceptionally good in their section.

Snowflake Lime Works, Fulton, Mo., say that the outlook for 1909 will be more than double that of the preceding year.

F. W. Watts, Osage City, Mo., says he caters to the home trade and that the business outlook for 1909 appears to be very good.

Cape Lime & Marble Company, Cape Girardeau, Mo., expect to add a new kiln in the immediate future, and state that prospects for the coming year are very good.



VULCAN STEAM SHOVEL OPERATING IN QUARRY OF NATIONAL LIME & STONE COMPANY, CAREY, O.

## ROCK PRODUCTS



## National Lime Manufacturers' Association

Meets Semi-Annually.

### OFFICERS.

William E. Carson, Riverton, Va. .... President  
 Charles Weller, Milwaukee, Wis. .... 1st Vice-Pres.  
 Walter S. Sheldon, Hamburg, N. J. .... 2nd Vice-Pres.  
 M. H. Deely, Pittsfield, Mass. .... 3rd Vice-Pres.  
 C. W. S. Cobb, St. Louis, Mo. .... Treasurer

### EXECUTIVE COMMITTEE.

William E. Carson, ex-officio; Chas. Warner, Wilmington, Del.; T. E. Fleischer, Sheboygan, Wis.

### The Semi-Annual.

The seventh semi-annual meeting of the National Lime Manufacturers' Association will be held some time during August at Atlantic City, N. J. All lime manufacturers should arrange to take their holidays at that time, and to attend this meeting. Atlantic City is one of the world's famous watering places and summer resorts. Those who have not been there will have an opportunity to visit this wonderful place, while those who have once enjoyed the cool sea breezes on the board walk and a dip in the ocean will receive with pleasure the announcement of this meeting, that they may again enjoy the pleasures afforded there.

### Improving Lime Plant.

ROCKLAND, Me., April 10.—The Rockland-Rockport Lime Company has been making a number of important improvements upon its plant in this city. Chief among these, perhaps, is the reconstruction of the North Marine Railway, acquired by the company last year, so that its barges may be taken out there for repairs.

Another important improvement on the water front is the extension of the Point Kilns Wharf, so called, now nearing completion. The new wharf is about 185' longer than the old one and has a frontage of about 190'. The granite retaining walls were built by P. H. Doyen & Co., of Portland, the stone being furnished by the Chase Granite Company. Mr. Doyen has been using in this work his lighter Atlas, which is fitted up for dredging as well as freighting. The wharf will be filled in with lime core and ashes, thus giving the company a place where the refuse may be dumped to advantage.

On the other side of Crockett's Point, at the Messer kilns, the company has built a piece of trestlework about 150' long, which has been double-tracked and is used to facilitate the loading of the barges with the rock and chips which are shipped at intervals to points south of New York and used there for fluxing purposes. The chips are dumped from the kiln trestle into bins, from which they are poured by chutes into other cars beneath. By means of the gravity process the cars go forward to their destination on the end of the dock, the contents of the cars being discharged directly into the hold of the barge.

No power is necessary on this little railway, for the weight of the loaded cars going down one track brings back automatically the empties on the other track.

This arrangement is but one of many labor and expense saving devices which have been brought into play since this company assumed practical control of the local lime industry.

At the present time the Rockland-Rockport Lime Company has thirty kilns afire, twenty-five of which are burning in this city. The manufacture of hydrated and agricultural lime is also being carried on to quite a large extent.

A new official is Nathan F. Cobb, associated with Cobb, Butler & Co., who will be superintendent in connection with the kilns.

The lime company has the advantage of having its local affairs vested in the hands of a thoroughly competent and experienced staff. Every department has at its head a man who has grown up in the atmosphere of this industry, while the business affairs are splendidly handled by Manager H. A. Buffum and a staff of popular and efficient young men.

## LIME STANDARDS.

Standardization Committee Meets Directors of New England and Jersey Experiment Stations and Classifies Agricultural Lime.

That the National Lime Manufacturers' Association is accomplishing things is fully demonstrated in the bulletin sent out by President William E. Carson, which is as follows:

To All Lime Manufacturers:

At the semi-annual meeting of the National Lime Manufacturers' Association, held in Cleveland, August 12 and 13, 1908, the president was authorized to appoint a "Standardization Committee."

This "Standardization Committee" was to take up with the directors of the New England, New York and New Jersey agricultural experiment stations the question of arriving at some standard on agricultural lime.

Up to this time no standard has been fixed, and the result is that the sale of agricultural lime has not been handled in an intelligent way. This has resulted in a great deal of confusion and has engendered distrust among the farmers, who refer to their agricultural experiment stations for information.

The directors of the experiment stations have had certain ideas as to the chemical purity of lime that are not in line with, and in fact are impossible in commercial usages. So it was felt that it would be well for the lime business that some standard could be arrived at on which agricultural lime might be sold without antagonizing the agricultural experiment stations.

The president appointed Messrs. Sheldon, Warner and Healey as a committee. After considerable work, this committee met a special committee, Professors Wheeler, Voorhees and Wood, who were appointed by the agricultural experiment stations, to confer with them so as to arrive at some standard that could be mutually adopted by the lime manufacturers and would be acceptable to the directors of the agricultural experiment stations.

You can readily see the importance of the work that has been done by this committee, as we will have the aid of the experiment stations, to whom we can refer inquiries as to what the standard of lime should be for agricultural purposes.

This committee, within a reasonable time, has to again meet the special committee appointed by the directors, so as to finally close up this matter.

Attached hereto you will find the report of this committee, which I would like you to carefully study and let me have your conclusions thereon. The matter will be closed on April 30, so that we would like to hear from you just as promptly as you possibly can reply, as I want to be able to inform the committee as to what the general sentiment of the lime manufacturers is on this matter, and their findings on the proposed classification.

### Report of Standardization Committee.

I have the honor to report on behalf of the special committee appointed to meet the Valuation Committee of the Eastern Experiment Station Directors, as follows:

We were received by the chairman of the Valuation Committee at the Adams House, Boston, Mass., on the morning of March 3, and after a general conversation in which the interest of the directors of the use of lime was expressed and we had stated that we, as a committee, would endeavor to represent all the manufacturers in the East, we were referred for further consideration to the special committee, with the following members: Professors Wheeler, Voorhees and Woods, the conference resulting in the presentation of the following classification to the Valuation Committee for their approval and acceptance.

It will be noted that high calcium and high magnesium limes are under this classification on exactly the same basis, and so far as we can learn the directors expressed no preference and have no data on which to base comparative conclusions; therefore, the words oxides and carbonates, as used in the classification, apply to either calcium or magnesium. Therefore, our manufacturers are simply required to label their shipments, whether high calcium or dolomitic, and to give the guaranteed analysis showing the respective percentages of calcium or magnesium oxides. The percentages fixed upon in the classification are in our judgment fair to all manufacturers, and it is simply a standard to which our products should approximate. Of course, if a caustic lime consists of more than 10 per cent of carbonates in lump form, the lime would pass into an inferior classification if submitted for a test to the agricultural station. The greatest change which is instituted is in the selling of lime by cwt. or ton, but the advantages of this are so obvious that we trust that the many lime burners who still use the bushel standard will be entirely willing to conform to the new standard.

Your committee suggests that a copy of this report be sent to all manufacturers in the eastern states from Maine to Virginia, and including West Virginia, asking them to report their acceptance or their criticism of the new standard.

All shipments except Kiln Slaked shall be accompanied by a statement showing (1) proper class name and (2) guaranteed analysis in which the respective percentages of calcium and magnesium oxides are given.

Package shipments to show class and analysis on each package.

classification suggested in advance of the regular semi-annual meeting of the National Lime Manufacturers' Association at which this report will be formally submitted. If there is serious objection, your committee can again take up the matter, and if not, it would expedite matters and advance the interests of the trade to have the report ratified and notice to that effect filed with the station directors at an early date. It will then be proper for each individual manufacturer to file with his state agricultural station such information under the accepted analyses, and package labels, as he may deem proper.

Your committee did not feel that it was within our scope at the present time to take up the question of prices with the Valuation Committee, believing that each manufacturer, under the terms of this classification, should file his own quotation, as he may deem proper, with the understanding that if his lime exceeded specifications and was guaranteed to that effect that he would be entitled to charge a corresponding price without reference to other manufacturers' quotations which might be on file. Respectfully submitted,

WALTER S. SHELDON, Chairman.

### Will Reconstruct Old Lime Plant.

NEW ORLEANS, La., April 12.—The lime plant at the Lake Borgne Canal, owned by the Louisiana Lime Company, was sold at public auction yesterday by Sheriff Nunez, in accordance with an order directed to him by the Civil District Court of Orleans Parish, L. A. Brougier, representing W. J. Kelly, the promoter, who was out of the city, was the highest bidder, and the property, which consisted of the buildings and contents, was adjudicated to him for the sum of \$350.

It is stated that the plant will be completely renovated and new machinery installed for the manufacture of lime under the new process. A new company will be organized and very likely Mr. Kelly will be at the head.

### Damaged by Fire.

MANITOWOC, Wis., April 12.—The plant of the Union Lime Company at Grimms, fourteen miles west of Manitowoc, was badly damaged by fire Sunday, and the loss, including other property destroyed, may aggregate \$50,000.

The officials of the plant announce that they will rebuild the plant at once. The company carried but small insurance, owing to the high rates. The fire is the second which has visited the Grimms plant in a few years ago, the kilns being entirely destroyed four years ago.

### Progressive Lime Company.

Longview Lime Works, of which J. B. Adams is president and general manager, operates an extensive plant at Longview, Ala., with a daily capacity of 800 barrels. The products of the company include lump lime, hydrated lime, ground lime and agricultural lime. The works were founded in 1874, and accordingly, have been in existence and in active operation for more than a third of a century. One of its principal brands is Creamoline, which, as the name implies, is the cream of lime. This lime is hydrated. Accuracy of proportions, which is impracticable with lump lime putty, is assured by the use of hydrated lime.

Another well-known brand manufactured by the Longview Lime Works, is Longview lime. This lime was awarded the first prize at the World's Exhibition in St. Louis and at many other expositions and fairs where it has been shown.

### New York Lime Company Elects Officers.

CARTHAGE, N. Y., April 1.—The annual meeting of the stockholders and directors of the New York Lime Company was held recently and the following officers were elected: President, J. G. Jones; vice-president, A. F. Nims; secretary, A. T. Wood; treasurer, Peter Yousey. The directors chosen include the above and A. F. Miller and C. J. Reeder.

The International Lime Company has been incorporated at Seattle, Wash., with a capital stock of \$350,000. Jesse A. Frye, Seattle, and A. M. Lee, Seattle.

### Classification of Lime For Agricultural Purposes.

LIME.	(1) High Calcium..	(1) Hydrate.	(1) Spraying	Must contain 93 per cent combined oxides and hydrates and all pass a standard 100-mesh sieve.	
			(2) Land...	Must contain not less than 90 per cent combined oxides, hydrates and carbonates, of which not over 25 per cent shall be carbonates.	
	(2) Dolomitic or High Magnesium...	(2) Caustic.	(1) Lump...	Must contain 90 per cent combined oxides and carbonates, of which not more than 10 per cent shall be carbonates, excepting Ground, which may contain 20 per cent carbonates.	
			(2) Fines...	Must contain 90 per cent combined carbonates and pass 50-mesh sieve.	
		(3) Ground Limestone.....	(3) Ground	Must contain 90 per cent combined carbonates and pass 50-mesh sieve.	
			(4) Kiln Slaked.....	Not guaranteed, contains core, ashes and refuse.	

Bulk shipments to have class and analysis statement attached either to invoice or inner side of car.

All lime to be sold by weight, cwt. or ton.

Analyses to be those at kiln and guaranteed.

## BANNER HYDRATE.

### Mammoth Lime Plant of the National Mortar and Supply Company, at Gibsonburg, Ohio.

In the lime producing industry of this country there is no man better known or more highly respected than A. H. Lauman, at the head of the National Mortar and Supply Company, of Pittsburgh, Pa. His whole career has been one of achievement, and well earned success is the reward of his well-directed practical efforts, which is reflected in equal measure to those who are associated with him in his business organizations.

Mr. Lauman is of sturdy German parentage, and he came to America in early manhood. For many years Pittsburgh has been his home. There he learned the plasterer's trade, and as a practical workman he is known as an expert. He naturally progressed into the contracting business, and by the application of his practical knowledge of plastering materials, method of mixing and systems of work, he quickly gained a competency.

He was among the first to see the need in the market for lime transformed into a hydrate, and took up the study of "dry putty" many years ago. In this branch, like everything he has ever undertaken, success came along like the expected result. The extensive plastering material and mortar business of his company at the great market of Pittsburgh have a place that is well recognized in the trade, and as an incident to this business the output of the great lime plant, at Gibsonburg, Ohio, is marketed.

The lime plant and hydrate mill of the National Mortar and Supply Company was completed just about one year ago, although the perfect adjustment

The plant is driven by steam power generated in three 100-h. p. boilers, which are embedded in concrete and brick. The draft is induced by a single stack that stands upon a massive concrete pier 120' in the clear without a guy line or support of any kind. The engine room adjoins the boiler house. It is 40'x50', neat as a pin. Here an automatic compound Corliss engine of 180 h. p. drives the main shaft of the entire works, by means of a 22" main belt. The shaft runs in babbitt boxes, resting upon concrete piers that are set upon bed rock. The floor of the engine room is brick. A Bury air compressor (345' per minute) furnishes the air needed to run the quarry. A dynamo in the power department also makes the current for lighting every part of the works.

The general superintendent of the works is Fred J. Wertelewski, a young man of considerable attainments, and in all the work of assembling the great plant he has been Mr. Lauman's chief assistant.

The quarry is equipped with industrial tracks and two yard side dump cars, both air and steam drills of the Ingersoll-Rand type, besides plenty of tools to accommodate modern quarry methods. Cars are loaded with rock at the working face, and taken by a cable incline to the top of the kilns and there discharged by side-dumping. The cars return by gravity to the quarry floor.

Between the quarry and the lime kilns is located a well appointed rock crushing plant. (Immediately beneath the incline that carries rock to the kilns.) This is one of the products of the plant, broken rock being sold to road contractors, to public officials for street improvements and for concrete work. A No. 5 McCully crusher, with suitable elevators and separating screens, does the work in this department. The stone storage bins have a capacity of 400 tons, and four separations are made, as is usual in Ohio road requirements at the present time. The bins are

then turned on, the proper amount of each being governed by valves and determined by the color of the flame. At its best the flame is a light yellowish color. The heat required is between 1,500 and 1,800 degrees centigrade. The natural draft created carries the flame about 8' above the fire arch, depending, of course, largely on the size of the stone and the way it is packed into the kiln. It requires a shift of two men to run the firing operation and drawing of the kilns. Draws are made every three hours.

The operation of the basket below the kiln is governed by a lever from the firing floor. The lime is dropped into steel cars and distributed over the brick cooling floor, 125'x125' in size. The lime floor is shut off from the hydrating mill and warehouse by a concrete curtain wall, but connected by a galvanized iron fire door.

The first floor of the warehouse, which is the shipping floor also, is 135'x128'. Lime is brought into the mill on wheelbarrows and put through a Sturtevant crusher. From this it is spouted into a steel-enclosed Jeffrey elevator and raised 48' to the third floor. Here, in a 50,000 pound capacity bin, the crushed lime is kept. From this bin the lime is spouted into a grinder, and from there is dropped into another bucket elevator which conveys it up 35'. The pulverized lime then passes over a fine screen for glass house lime, the tailings being spouted back to the pulverizer and put through again. After passing the screen the lime drops into a bin of 20-ton capacity, and from there into a bagger. It is now ready for the ground lime trade, which is a rapidly growing branch of the industry.

The hydrating plant is operated under the Lauman process, the handiwork and invention of A. H. Lauman, whose successful engineering ability first introduced hydrated lime on a commercial basis. The hydrating machines, of which there are two, consist of 30' cylinders 48" in diameter. These cylinders are stationary, and the mass of contained material is agitated by the action of paddles. The hydrators are in a level position, and the mass pushes through the machine while a stream of water is played on it, the process being continuous. The capacity of each hydrator is four tons per hour. The hydrate is again elevated to the third floor through an open spiral conveyor 150' in length, this being the cooling process. From this conveyor it is spouted into two Raymond Brothers impact pulverizers, one for each hydrator. These machines are operated continuously, the current of circulating air drawing the finest particles of the hydrate up into the storage bins. The coarser particles are dropped back into the pulverizer, after which they are again put through the same separating process, and no tailings are found on the floors. Each of the two bins has a capacity of twenty-five tons of uniformly separated hydrate.

In this whole process of hydrating not a human hand touches the lime from the time it is dropped into the crusher until the bags are removed from the bagging machines. It is entirely automatic.

The hydrate manufactured at this plant is well known to the trade in all parts of the country as a fine specimen of the famous Ohio type of magnesian lime, perfectly hydrated. Its market name is "Banner" Hydrate Lime, and with the exception of that part sold in the shape of ground lime the entire output of the ten kilns is made into hydrate.

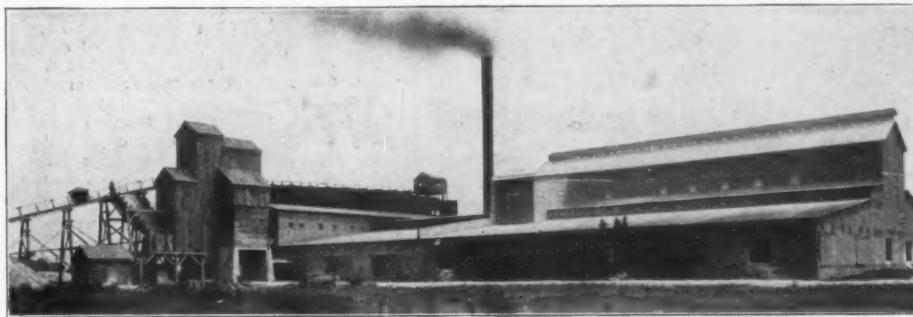
The growth of the demand for hydrate in the past year or two proves that the improved method of marketing lime is a success, one that will continue to grow and be a benefit to the producer, the retailer, the contractor, and last but not least, by any means, the consumer, who gets a better job and is satisfied thereby. All of this benefit and achievement is in no small measure creditable to the presiding genius who designed and constructed the plant just described, because he first recognized a need for a hydrate and set about producing it with gratifying success, and he allows that it is not necessary to state that such experience costs money.

### Will Establish Lime Plant.

JOHNSON CITY, TENN., April 6.—A lime manufacturing plant will be put into operation at once on Knob Creek, on the premises of John Stout. Captain Lundy and son will have charge of this plant. The limestone found on the Stout farm is said to be of an excellent variety for lime-making. The greater part of the output will be used in this city. The plant is near the C. C. & O. Railway.

### Elect New Officers.

BELLEFONTE, O., April 10.—At a meeting of the stockholders of the Bellefontaine Stone and Lime Company recently the following directors were elected: John M. Hamilton, Ernest M. Hamilton, S. A. Hoskins, Frank Dowell and Frank E. Mitchell. The directors organized by electing John M. Hamilton, president, Ernest M. Hamilton, treasurer, and Frank Dowell, secretary and manager.



WORKS OF THE NATIONAL MORTAR AND SUPPLY COMPANY, GIBSONBURG, O.

of all the multitude of details contained in such a large institution has taken very nearly another year. That is to say, so much time has been found necessary to develop all the economies and complete the practical working conveniences that are characteristic of Mr. Lauman's practical engineering skill and foresight. It is the largest single plant operated in the world for the production of lime, and the same statement is true of the capacity of the hydrating mill. Further, it is, taken all in all, the most progressive plant in existence, for the designer is the pioneer of burning lime with producer gas, this being the second great plant where he has successfully applied this new economy to the lime business.

The plant is located on the outskirts of the town of Gibsonburg, Ohio, about the center of the rich limestone belt frequently referred to as the famous Toledo district. The properties selected consist of about eighty acres of quarry land, all of which is but slightly covered over with a thin layer of top soil, while beneath is a deposit of known depth of 150 feet of one solid body of rich dolomitic limestone rock. The property is connected with the main line of the Toledo division of the Pennsylvania Railroad by a spur track one-half mile long. This runs alongside of the loading docks for outgoing shipments of the output of the plant, and also extends to the rock crusher storage for gravity loading. A branch from the main spur one-fourth mile long reaches the coal pockets at the opposite side of the plant, where are located the boiler house and the gas producers. By this means a single delivery of coal will take care of both of these indispensable initials of the operations.

All the buildings and heavy structural parts of the plant are built upon massive concrete foundations which rest upon bed rock. The boiler and power house, the kiln house, including the drawing floor, are built of hollow concrete blocks made on the job for the purpose. The hydrating mill building is of the best wooden mill construction. The firing floor is of iron and brick construction; also the construction incident to the installation of the gas producers, making them perfectly fireproof.

erected upon solid concrete foundations of sufficient elevation to provide for loading the cars by spouting the material direct by gravity. A 40-h. p. engine operates the crusher plant.

The kilns are a battery of ten, which can be increased to fourteen. They are of steel, lined in the usual way with firebrick. They are 37' high from the floor to the top. Six feet over the top of the kilns is a cast-iron cribbing extending 16' inside over all. Into this the stone is dumped from the quarry cars, the hoist and the dumping of the cars being taken care of by one man. Here a large amount of stone can be stored, and as it lies there before being pushed into the kiln it receives the benefit of the heat in drying.

The burning is done by the Bradley producer-gas process, which was installed by the Duff Patents Company, of Pittsburgh. This process has been successful in glass and steel plants in all parts of the country. Two producers will supply the full battery of fourteen kilns, as one producer takes care of eight kilns very handily. The coal used is mostly from the Ohio and Pennsylvania bituminous districts. On the firing floor the coal is dumped into a hopper and fed to the producer. The oval shaped retort is 9' long, 8' wide and 12' deep. Below the grate in the producer is a layer of ashes submerged in water to prevent air entering from below. On either side of the producer are two sets of pipes, four in all, one-eighth inch in diameter. Through these pipes steam is injected at a pressure of 45 pounds. The steam carries the required amount of air necessary to create the gas. The latest development in producer practice has just been installed. This consists of an automatic power poker, which by a mechanical contrivance agitates the coal while it is within the retort to secure ultimate efficiency from the fuel.

The gas passes into brick-lined steel flues 110' long and 48" in diameter and running the entire length of the battery of kilns on both sides.

In making the first fire in the kiln, about a cord of wood is piled on the fire arch and the kiln filled with rock. By the time the wood has burned out the limestone has become red hot. The gas and air are

# FROM OUR OWN CORRESPONDENTS

## PHILADELPHIA.

PHILADELPHIA, Pa., April 14.—With the exception of the operative building work, comprising rows of two and three-story dwellings, the general building situation remains unchanged. A few jobs of considerable magnitude have materialized, but the volume of business is still far below a rational expectation for the time of year. The signs, however, for improvement are more encouraging, as it is believed the settling of the tariff controversy will give the desired impetus to business in all lines.

Among the operations on the boards are:

A new depot for the Pennsylvania Railroad, to be erected at Union Station, Baltimore, Md., to cost \$1,000,000.

Ballinger & Perrot, architects and engineers, have completed plans for buildings and equipment for a \$300,000 plant, to be built at Northeast, by the Grape Products Company. The main building will be 401' x 112', three stories and basement, the power house 60' x 45', one story. Both buildings will have walls of brick with concrete panels in each story between windows, and the columns, girders, beams and floors and roof slabs will be of reinforced concrete, making the buildings entirely fireproof. They will be equipped with two large freight elevators and full power plant.

The same architects have awarded contract to Roydhouse-Arey Company for a new cabinet manufacturing plant, to be erected on Delaware Avenue, between Market and Cooper Streets, Camden, N. J., for the Victor Talking Machine Company. The plant will consist of two buildings connected by covered passageways, one of which will be four stories high, 133' x 130', the other one story, 69' x 139'.

John Stafford will build ninety two-story houses at Twenty-eighth, Twenty-ninth and Berks Streets and Montgomery Avenue, to cost \$188,900.

Samuel Shoemaker has permit for seventy-eight two-story dwellings, to be erected on Race and Fifty-ninth Streets and on Spring Street east of Salford, to cost \$158,000.

Calvin W. Rogers will build twenty-two three-story houses, on Walnut west of Fiftieth Street; cost, \$115,200.

Ballinger & Perrot, architects and engineers, have completed drawings for alterations and two additional stories to the manufactory of Ivins, Dietz & Metzger Company, Seventh Street and Lehigh Avenue. The work consists of a fourth and fifth story, with brick walls and slow-burning interior construction, below which the work will consist of steel columns fireproofed with concrete, and fireproof cement floors.

Carl P. Berger has completed plans for a concrete and frame carousel and shelter, 86' x 86', for the estate of G. A. Dentzel, to be built at Woodside Park.

J. Harry Bennett has contracts for storm water sewers, on the East Side, Cape May; cost, \$18,336.

J. M. Hendricks will build fifty-two buildings at East Washington Lane and Duval Street, to cost \$126,400.

The Link Belt Company will build a steel and concrete coal pocket 46' x 104', on the west side of Darien Street, south of Fairmount Avenue, for the Reading Railroad, at a cost of \$85,000.

The Master Builders' Exchange of Philadelphia gave a smoker, vaudeville show and luncheon at its rooms, 18 South Seventh Street, on the evening of March 22, to which members of kindred associations accepted invitations to be present.

The attendance was large and highly appreciative of the interesting entertainment provided. Thomas F. Armstrong, chairman of the entertainment committee, was master of ceremonies, function for which he is admirably adapted; his announcement of the popular songs of the day, in which all joined, and the alternating stunts on the stage, were most original and mirth-provoking. William A. Kramer, member of the exchange, had charge of Gamble's orchestra, and no word need be said of a performance under so skillful a director. Mr. Kramer's business associate, C. H. Ehrenzeller, shone as a choral leader. It was something of a treat to see this man of gigantic stature, a two-foot rule waving as a baton, pouring out a voice which must have pierced the suburbs, but which was fraught with a melody so inspiring as to entice the most delinquent in song to follow after. Charles Elmer Smith, the popular secretary and general superintendent, was stage manager, and the alacrity and smoothness with which matters were conducted attest to his ability in this line.

At 8:30 Chairman Armstrong introduced Franklin M. Harris, Jr., president of the exchange, who gave a

warm welcome to members and friends, after which an overture from Mendelssohn was rendered by the orchestra, followed by the lusty singing of "America" by all standing. These preliminaries were followed by the program of the evening:

- No. 1. Musical sketch, by two colored artists, who could justly be called musical athletes, one of them ingeniously manipulating and making sweet music upon three different instruments at the same time. This almost incredible performance was received with delight, and the nickels and pennies fell like a hailstorm about him.
- No. 2. Song, "Harrigan," by audience.
- No. 3. Comedy by Collins & Wells, the witty sayings and songs of whom were vastly appreciated by the audience.
- No. 4. Song, "School Days," by audience.
- No. 5. Song and dance, by Nellie Tapper—a treat for ear and eye, and heartily applauded.
- No. 6. Song, "Waltz Me Around Again, Willie," by audience.
- No. 7. Song and recitation, by Alice M. Lawrence, who charmed the boys to such an extent there seemed no end to their applause and encores.
- No. 8. Song, "Under the Anheuser Bush," by audience.
- No. 9. Solo, by A. J. Carty, a member of the exchange, which was a musical treat.
- No. 10. Song, "My Old Kentucky Home," by audience.
- No. 11. Pope and Uno. The performance of his dogship, Uno, astounded the spectators; the gift of speech seemed only lacking in this wonderful canine.
- No. 12. Stein song, by audience.
- No. 13. Impersonations and rapid changes by the special favorite of the exchange, Irene Law, who was given a royal welcome.
- No. 14. Song, "Love Me and the World Is Mine," by audience.
- No. 15. Harron, as the Little German, was a sidesplitter.
- No. 16. Richard T. Cropper, the popular slate and face brick dealer, and member of the exchange, sang by request his inimitable "Old Black Joe," the audience joining in the chorus.
- No. 17. A sister team, song and dance, was an alluring performance, and elicited abundant applause.
- No. 18. Song, "Tammany," by the audience.
- No. 19. An acrobatic performance by Hall Brothers, a wonderful exhibit of strength and nerve, which wound up the show, after which a bountiful and tempting buffet luncheon was appreciatively partaken of.

It was agreed by all present that the entertainment committee deserved great credit for the very enjoyable evening's program, which was pronounced unsurpassed of its kind.

The guests included a large delegation of lumbermen, among whom were: Frederick S. Underhill, of Wistar, Underhill & Company, and president of the Lumbermen's Exchange; George A. Howes, chairman of the office and entertainment committee of the Lumbermen's Exchange; Charles M. Chestnut, general manager Yellow Pine Company, of Philadelphia; Joseph P. Comegys, vice-president Barker & Company, Inc.; H. H. Banners, of W. J. Banners & Sons; A. S. McGaughan; Richard Torpin, of Richard Torpin & Company; Louis A. Nagle, of L. A. Nagle & Company, Ogontz, Pa.; Edward A. Coane, of Henry C. Patterson Company; Emil Guenther; Joseph P. Dunwoody, of Forest Lumber Company, Pittsburgh, Pa.; J. A. Finlay, of Harding-Finlay Lumber Company; also H. M. Fetter, vice-president William G. Hartrauft Cement Company, and Henry Longcope, manager Alpha Portland Cement Company.

The Engineers' Club of Philadelphia held its regular meeting on March 20, President W. P. Dallett in the chair; eighty-two members and visitors present.

The president announced that a committee composed of William Easby, Jr., J. O. Clarke and William S. Twining had been appointed on the revision of the by-laws, to harmonize a number of existing contradictions and ambiguities, and requested the members of the club, if there should be any who had suggestions to make on the subject, to forward same to one of the members of the committee.

The death of Alexander Murrie, active member of the club since December 21, 1907, which occurred on March 19, was announced.

George H. Benzoni, Jr., active member, presented the paper of the evening, entitled, "Metal Planing Machines."

Another business meeting was held on April 13, President Dallett in the chair; 180 members and visitors were present. George Amandus Buvinger, Hamilton Eugene Hutchins, Robert Bruce Lewis and

B. B. Milner were elected to active membership; David S. Thompson and Clarence E. Wunder, to junior membership, and Edward Foggs Cobb, to associate membership. J. O. Clarke, chairman of the reception committee, announced that the ladies' reception would be held on April 30, and requested that members notify the committee of their intention to be present. The paper of the evening, entitled "Wireless Telegraphy and Telephoning," was presented by A. Fred Collins, visitor, and was a demonstration of certain forms of apparatus used in this connection. It was followed by a discussion on the subject by several of the members. A vote of thanks was extended to Mr. Collins.

H. M. Fetter, second vice-president of the William G. Hartrauft Cement Company, 1114 Real Estate Trust Building, states that business falls short of volume looked for at this time of the year, but there is a discernible improvement of late, and the outlook is encouraging.

Henry T. Peirce, president of the Peirce-Walton Company, contractors, complete equipment, 1122 Land Title Building, reports a slight betterment in trading, but conditions on the whole are disappointing. Mr. Walton has withdrawn from the concern.

E. E. Nickson, manager of the National Fire Proofing Company, 317 Land Title Building, says his concern caters to large construction work, of which, unfortunately, there is very little on the boards which it is deemed advisable to push at present. A goodly number of large jobs are in contemplation, consequently the outlook is promising.

Among the many new uses of concrete comes the recent announcement that a concrete safe has been installed at the Scotia office of the resident engineer of the barge canal. These safes are the invention of H. B. Finan, and are used by the engineers to preserve their records, drawings and fine instruments from the weather, and as a precaution against fire. The safe in question has a steel door and an asbestos lining, a combination lock, and is molded of concrete in one piece. The cost is little compared with that of a steel safe, and for all practical purposes they are as good. When the engineer moves to another place the concrete shell can be stripped of its door and lining and another safe constructed elsewhere from the same wooden forms. The safes used in the barge canal work measure about three feet in diameter on the inside.

The Market Construction Company, capital \$100,000, was incorporated under New Jersey state laws on March 19.

The Interborough Construction Company filed articles of incorporation in Camden, N. J., on March 29. Capitalized at \$125,000.

Incorporators, Rowland Hill, Leonard H. Warne and Herbert N. Goss.

The Modern Engineering Company, Wilmington, Del., obtained a charter under Delaware state laws on April 2. Capitalization, \$100,000.

The Philadelphia Construction & Concrete Company was incorporated recently under Delaware state laws; capital, \$150,000. Incorporators are: S. Moore, of Lima, Pa., Harry W. Davis, of Wilmington, Del., and Edgar E. McWhinney, of Philadelphia. The same incorporators are also given in the charter obtained on even date by the Interstate Power Generator Company, to engage in the enterprises, generally, of mechanical and electrical engineers.

Report comes from York, Pa., that the General Roofing Manufacturing Company, East St. Louis, Mo., has merged with the York Felt and Paper Company, of which Jere S. Black is president. It is stated that the plant in York will be made the largest of its kind in the world. The York investors will retain their interest in the new concern, which will control the roofing paper market. The consideration was \$500,000.

Samuel T. Freeman & Company, auctioneers, on March 25 sold at public sale, by order of S. Spencer Chapman, receiver, the factory buildings of the Meade Roofing and Cornice Company, below Forty-sixth Street and Woodland Avenue. The buildings were sold for \$100, subject to encumbrances, with the accrued interest amounting to about \$58,000.

John H. Hutchinson, a widely known builder and contractor, died on March 18, aged 72.

David Evans, a prominent architect and builder, who designed many public structures, died on March 30, aged 66 years.

Michael Berry, 33 years old, of New York, a cement contractor, superintending concrete construction in the new Y. M. C. A. Building in Camden, N. J., on April 7 fell from the second floor to the basement. He is confined in the Cooper Hospital with a badly strained back.

Joseph T. Akin, 76 years old, prominent as a builder in South Philadelphia, died at his late home, 1608 Wharton Street, on April 10.

# CHICAGO

CHICAGO, ILL., April 20.—Probably the following little anecdote is a bit threadbare; nevertheless, it just about strikes a parallel to the cement industry at present. So let us tell it once more. A merry old tramp, dilapidated as usual, approached a country farm house one day with the usual, "Could yer give me a mite, kind lady, ter buy one a bite of bread?" "Well," replied that generous body, "I'll give you two-pence, not because I think you deserve it, mind, but because it pleases me." To which the quick-witted tramp replied, "Thank yer, mum, but couldn't yer make it a tenner, an' thoroughly enjoy yourself?"

So it goes in the cement trade, with the consumer taking the part of the old lady and the manufacturer assuming the role of the tramp.

Just enough cement is being ordered to keep the industry going. Orders are coming in, in a sort of hand-to-mouth fashion, and it takes the untiring efforts of the manufacturer to bring forth enough orders to make the game interesting.

Not that we mean to be pessimists, mind you, but we can't get away from the absolute truth. The large orders are slow in arriving, for while there is plenty of good work on the architect's boards, it is not being distributed as freely as would be expected.

With spring generally comes orders; spring has arrived; bring on the orders.

The feeling of doubt that was in our hearts was suddenly scattered as we entered the offices of George De Smet in the Chamber of Commerce Building. This gentleman, of Dehydrating fame, was busily engaged in polishing a piece of concrete tile.

"Well, Mr. De Smet, how is business?" we queried.

"Business with us," replied he, still busily engaged with his polishing, "is about on a par with that of last year; to be candid, it is just a little better. At the present time business is very fair and, although we are selling a little more waterproofing than cement, still the call for cement has been very good. A very pleasing order on our books is a big one for dehydrating the new 'Pythian Home' in Decatur, which is to be coated inside and out with this material. On the whole, we will pronounce business O. K."

L. J. Hewes, Chicago, manager of the Power and Mining Machinery Company, reports the company as fairly busy. They recently contracted to furnish the new Pittsburg plant of the Universal Portland Cement Company thirty six-tube mills and two No. 5 McCully crushers. Judging from the orders coming into this firm's office, the cement men must still be doing some business.

W. E. Cobean, sales manager of the Wolverine Portland Cement Company, spoke rather conservatively of existing conditions.

"We try to be always optimistic, therefore would say that while conditions could be a great deal brighter, still the demand and the price are at least fair. There ought to be some improvement soon, however, so let's wait for that time with a smile on our face."

"We hate to grumble," stated Fred J. Morse, of the Sandusky Portland Cement Company, "but things are not what they ought to be, so we might as well admit it. But, then, there is always a future to look forward to, so we can't afford to become discouraged."

The Chicago Portland Cement Company reports a fairly steady run of business.

"Things are running along steadily considering the time of the year. The weather has been such that not much improvement could be expected, but with good weather, June, July and August should be extraordinarily good. We have not lost hope in the prospects for the summer and, what is more, we do not intend to; so when the rush does come, we will be prepared to meet it." So spoke Mr. McDaniel.

The Austin Machinery Company, Manhattan Building, is much elated at the turn events have taken. While it states that business has been of the jumpy kind, still there has been sufficient business at all times to keep quite busy. For instance: February was exceedingly good, while March, for some unaccountable reason, fell away down. Again, this month has started out in whirlwind fashion. In speaking of general conditions Mr. Moats said: "Conditions seem very bright in the concrete business. We have more than plenty of work on hand to keep us busy for some time. As long as things continue better than last year, we have no reason to complain and have turned our efforts to April, which bids fair to be a record-breaker."

The Austin company has a good many unshipped orders on its books, chief among which are: A No.

5 crushing plant to be furnished the Inter-Mountain Railway Company, Denver, Colo.; a No. 5 and a No. 3 crusher with elevator screen for the Bluffton Stone Company, Bluffton, Ind.; a No. 4 crusher for the Higgins Stone Company, Bellevue, Ohio; the city of Salem, Va., has ordered a No. 4 crushing plant; a No. 5 crushing plant is to be installed for J. F. Byers, Chanute, Kan.; a No. 5 crusher, a 60' No. 7½ elevator and a 48"x16' revolving screen is to be furnished A. B. Block, Boston, Mass.; the Kansas City Brick and Stone Company has ordered a No. 5 crusher with elevator and screen; a No. 7½ and a No. 5 crusher with elevator, screen, quarry cars, etc., is to be furnished the Springfield Stone and Ice Company, Springfield, Ohio; a No. 5 crushing plant is to be sent to Musson's, Limited, Montreal, Canada; and a No. 6 crushing plant has been ordered by the Board of Public Works in the distant country of Pernambuco, Brazil.

Small wonder, then, that with these and other good orders on its books, the Austin Manufacturing Company is satisfied with conditions.

The Chicago Union Lime Works Company finds business very good. In speaking for the firm, Mr. Pleas said: "The outlook for this season is just as good if not better than last year. Prices seem to be holding their own. There is a great deal of paving and building work done in the spring, consequently we have reason to expect a very prosperous season."

Mr. Stebbins, of the Lake Shore Sand Company, finds business about on a par with last year. He stated that trade is just starting to open up, and while nothing extra good can be said about it, still things are holding their own fairly well.

The Richardson Sand Company is very busy filling its orders for city paving work, having lately received many large orders from the city railway. With these large orders on its books and with the number of smaller orders that have put in an appearance, the company is very well satisfied with present conditions.

Mr. Brand, president of the Atwood-Davis Company, is more than pleased with local conditions. But let him speak:

"Business now," said Mr. Brand, "is considerably better than it has been for some time and, what is more, it is improving steadily. The city work will be awarded in the near future and upon the letting of this \$800,000 worth of work, every one in the trade will be in condition to go steadily forward. The spring weather has been a little against us, but with the clearing of the skies will come the rush of business."

The Eastman Plastering Company has removed from 324 Dearborn Street to the Marquette Building, 204 Dearborn Street.

## CLEVELAND AND VICINITY.

CLEVELAND, OHIO, April 15.—This city is enjoying the first genuine building boom experienced in many months. Although some other lines of industry are still very quiet, a great deal of building is under way, and large sums of money are being expended. Owners are taking advantage of the continued cheap price of materials, and are trying to get in under the wire with their operations.

An arrangement was arrived at during the month whereby the Citizens' Savings and Trust Company, receiver for the mammoth Hippodrome Buildings, has been empowered to issue \$250,000 in receivers' certificates for the completion of the office buildings facing on Euclid Avenue and Prospect Street. One is twelve stories high and the other seven. Considerable plastering in corridors and open floors is to be done, and the entire sum will be used up within the next six months in putting the building in presentable shape. The theater, which is the second largest in America, was finished some months ago and has been in operation, but the buildings were left in an uncompleted state.

The Cuyahoga Telephone Company has announced that it will spend a quarter of a million dollars in improvements this year. This sum will go into new conduits and street work and a new east end exchange, to be called the Wade Exchange and to be located on East Eighty-first Street, near Hough Avenue. It will cost \$100,000 and will accommodate 7,000 extra phones.

The Atlantic Refining Company has started a new plant in Newburg at a cost of about \$60,000. There will be three buildings, of brick, concrete and steel. The plans were prepared by the Osborn Engineering Company and the general contract awarded to Henry G. Slaymyer, who is also proceeding with the erection of a new \$50,000 building for F. M. Kirby on Euclid Avenue, adjoining the Guardian Bank Building.

An unusually large number of dwellings are being erected in Cleveland this year. The spring fever has taken possession of the people and they are in a mood to believe that real estate and homes are about the best thing they can invest their money in. From fifty to sixty dwellings a week are being started. They range from \$1,500 to \$25,000 in cost.

W. W. Hodges, architect, has prepared plans for a \$40,000 parochial school building for the congregation of Immaculate Conception parish on Superior Avenue at East Forty-fifth Street. The Masons' Supply Company has been awarded the contract for supplying the brick for this job. The floors will be of reinforced concrete. Another new school is to be built in Collinwood to replace the one destroyed by fire a year ago, when 173 children perished in the flames.

The contract for the erection of a \$60,000 building for Samuel D. Wise, at Euclid Avenue and East Sixty-fifth Street, has been let by Architect A. E. Skeel to Henry G. Slaymyer. It will have elaborate brick and stone walls, with interior of reinforced concrete. The building will be five stories in height.

The Masters & Mullen Construction Company will erect a new reinforced concrete factory building, 100'x140' in size, for the Ferro Machine & Foundry Company, at Hubbard Avenue and East Sixty-sixth Street. It will be a three-story building.

Work is in progress on the concrete footings and foundations for the new Brotherhood of Engineers' Building at St. Clair Avenue and East Ontario Street. The general contract, worth about \$75,000, has been given to the James Duff Construction Company, of Cleveland. Contracts for the superstructure will be awarded shortly. Steel is erected for the ten-story Bailey building on Ontario Street and concreting of floors and columns is in progress. Several other big buildings, including the Pope and Sterling & Welch buildings, which are among the finest retail stores in America, are rapidly nearing completion.

On May 1 plans will be received for the new \$250,000 building for the Cleveland Athletic Club on Chestnut Avenue, near East Ninth Street. The site has been cleared of four old houses. The building will be sanitary and fireproof throughout, containing a big concrete and tile swimming pool and other features. Six members of the club who are architects are preparing plans, as there is a competition on. Those competing are J. Milton Dyer, Hubbell & Benes, Abram Garfield, Frank Meade, Scarles, Hirsch & Gavin and Levi T. Scofield.

The contract for the erection of the building to be used for housing many of the exhibits to be installed in connection with the Cleveland Exposition to be held in June has been awarded to the W. B. McAllister Company and work is already well under way. The building is of mill work, with heavy walls with stucco finish. It is about 390'x250' and will be one of the largest halls ever erected in America. It will be temporary and will cost about \$50,000. A great deal of cement and plaster will be used in ornamentation in connection with the exposition.

On May 3 new bids for the erection of the South Side Library branch will be opened. About \$40,000 has been appropriated for the structure. Plans were prepared by Whitfield & King, of New York, but proved too elaborate, the lowest bid submitted being \$59,000. It is believed that the plans have been so remodeled that the new bids will come within the estimate.

The Kingmore Building, on Euclid Avenue, opposite East Twelfth Street, is to have a large three-story addition costing about \$40,000. It will be 45'x80'. The project of raising the front part from three to seven stories will also probably be done this year. The new front will be of glazed terra cotta.

Considerable building is being done for outside towns, for which Cleveland architects have prepared plans. Briggs & Nelson have just completed a \$75,000 Y. M. C. A. building for the town of Steubenville, O., and will take bids the latter part of this month for a \$60,000 Y. M. C. A. building for the town of Ashtabula, O. Another building costing about the same amount is to be erected by the same architects at East Liverpool, O., some time during this year.

Experts engaged by the water department have reported against a filter system for city water, declaring that it is not necessary. They recommend, however, that a steel tunnel sunk to the bottom of the lake and covered with concrete be used to establish a new intake for the West Side. Consulting Engineers George H. Benzenberg, of Milwaukee, and Rudolph Hering, of New York, have been engaged to pass on the new project.

The Builders' Exchange plans to hold its outing at Lake Harbor Hotel, on Mona Lake, Mich., the last week in June, going to Detroit by boat and thence to the resort by rail. It is expected that about 300 will take in the excursion, which will last five days and cost \$20 for everything complete.

J. H. Libbey, one of Cleveland's best known concrete contractors, who has been seriously ill with

## ROCK PRODUCTS

pneumonia for weeks, is reported to be rapidly recovering.

C. H. Burgess, president of the Euclid Concrete Company, has opened an office at the Builders' Exchange, placing his son, H. S. Burgess, in charge. The company deals in crushed stone for use in concrete work, having big stone crushers at Euclid, O. Mr. Burgess is a civil engineer and contractor, and was formerly county surveyor. He saw a great field in concrete and entered it.

The Masons' Supply Company has become the Cleveland selling agent for the Alpha Cement Company and reports business in that line quite active. The company has closed a contract for 5,000 barrels of Superior Portland for use in a church at Bloomington, Ind. Two good brick orders have been secured. One is for 75,000 chocolate pressed brick for the new Warwick apartments, and 100,000 for the new St. Ann's Orphan Asylum being erected on Woodland Avenue.

The Cleveland Builders' Supply Company reports an active call for building materials of all kinds. It has been awarded the contract for \$15,000 of Norman white glazed brick for use in the new West Side market house which is being built for the city by John Gill & Sons. The same company will also supply Bessemer paving brick for twenty paving jobs in Cleveland recently awarded to the Northern Ohio Paving and Construction Company.

The Concrete Steel Construction Company, of Pittsburgh, presented the lowest bid for the construction of the concrete substructure and paving on the new Denison Harvard viaduct. Its bid was \$165,000. Another concern will be awarded the contract for structural steel.

A great deal of sidewalk work is already under way. The Mathews & Gilbert Allotment Company is preparing to lay 25,000 square feet of cement sidewalk in its Oakwood allotment this spring and many other new sections are planning similar improvements on a large scale.

Five or six elaborate concrete bridges are being planned for East Side streets in connection with the elimination of grades on the Nickel Plate Railway. The bridges are to be of an ornamental character, and will be as wide as the thoroughfares which they are to carry over the railroad tracks. A brand new arrangement of concrete panels is now being considered.

## TOLEDO AND VICINITY.

TOLEDO, OHIO, April 15.—With the advent of the real building season, the outlook for a fairly active period of business improves daily, although just at present there is a disposition among prospective builders to delay starting until toward the close of May or early June. Just why this should be so does not become manifest.

Reports obtained from the building inspector show that for the first three months of this year there was an increase of 132 per cent in building operations over the same months a year ago. This large increase is highly satisfactory but is made up almost entirely of small buildings instead of a few large projects as is sometimes the case. Developments during the past few weeks have not brought to light any more large projects and the outlook just now is not quite as good for this class of building as it was a month ago and the probability is that the bulk of building in northwestern Ohio for this reason will be composed largely of medium-sized structures.

Quite a change is noticeable in the character of foundations being used this spring over those of years previous. While concrete has been used more and more for the larger buildings, its use has been almost foreign to smaller structures in this vicinity. This year, however, it has been used as footings and foundations for smaller houses and is becoming more and more the material for this purpose.

Some of the concrete block manufacturers are having a very busy season and are running overtime while others are using up the surplus stock which they accumulated during the winter months. The Ohio Builders' Supply Company, which manufacture a large number of building blocks of this nature, have instituted a new method in dampening their blocks which is meeting with considerable success. After the blocks are moulded and ready for drying, they are submerged 24 to 48 hours in a large tank. This is done to more evenly distribute the water generally used in sprinkling them while seasoning.

The Sanford Concrete Machinery Company has just installed one of its largest and latest block machines in the yard of Radtke & Company, Monroe, Mich. This shows what may be done in a fair-sized town by an aggressive person with a good line of concrete blocks. About three years ago Mr. Radtke installed a small machine which he intended to run as a side issue in connection with his general building supply business. His first effort was

to make good blocks, and after showing the people of Monroe what he could make, it was only a few months until he was obliged to put in a power mixer, and since that time he has installed the latest and most up-to-date machinery obtainable, in order to keep up with the demand for concrete block, which is now one of the most important items of his business.

A few of the sand suckers belonging to the local fleet have started operations for the season, but the entire fleet will probably not start till about the first of May. The small call for sand last season and large supplies carried over from last fall have been sufficient to take care of calls for this material thus far this season. There has been no change in the price since a year ago.

The Toledo Builders' Supply Company has just closed a contract with S. J. Pickett, subcontractor for the masonry work on the new post office building, to furnish all the sand, mortar, etc., necessary for the contract. Excavation has been started and actual work on the foundations will start some time in May. It has not yet been definitely decided by the treasury department whether local brick will be allowed for foundation work, or whether a harder brick will be demanded. As something like a million and a quarter of this class of brick will be required, companies in a position to compete are anxiously awaiting the decision of the treasury department.

The Buckeye Builders' Supply Company, which a year ago laid a private track to its yard near the Michigan Central Railroad, off Central Avenue, is expecting to increase the capacity of its yard there by the erection of additional storage sheds.

At the recent annual election of the Toledo Builders' Exchange, the established rule of the body was laid aside and S. J. Pickett was re-elected president for the ensuing year. Chauncey Peck, first vice-president, and who was the logical candidate for president, declined the honor on account of poor hearing. The exchange has recently made a number of alterations in its quarters on the top floor of the Smith & Baker Building. The entire floor is leased and the greater portion subleased at a figure which practically supports the organization.

A. E. Bentley & Sons Company has been awarded the contract to build the foundations for the new Nearing Building, which will be the largest structure to be built in the city this year. Concrete footings and foundations will be used. Bids are now being taken on the superstructure.

Only a limited amount of paving has thus far been advertised in northwestern Ohio outside of Toledo, but engineers state that the total amount of business for the year will probably equal that of a year ago.

The Ohio Steel Wheelbarrow Company, which some years ago had plans prepared for a magnificent new factory building in a more suburban location, reports that that scheme has been postponed for the present, and that subsequent developments will show whether the proposed plan will ever be followed or not.

The market for the finer grades of pressed brick continues light in this section. Only one job of any size, and that for only about \$30,000, has been sold thus far this season, and the outlook indicates that the call for better brick throughout the season will be for the cheaper shales. Red is the prevailing color, although some off shades of brown are creeping in. A. B. Luten, local agent for the Metropolitan Paving Brick Company, and who a year ago entered the local field as selling agent for a number of pressed brick manufacturers, reports a very satisfactory increase over the volume of business a year ago. Prices on all lines of pressed and wire cut facing brick remain the same.

Among the better class of buildings which are receiving attention by local architects and which will come up for figures within the next thirty days will be a mercantile building for Carleton Shaw; plans for Architect George S. Mills' conservatory of music for out-of-town parties; plans by Architect A. B. Sturges, mercantile building for J. H. Bellows; plans by Architects Bacon and Huber. The Toledo Mausoleum Company, which is now completing a 400-crypt mausoleum, contemplates the erection of a duplicate structure in this city. Practically all the crypts have been sold, and the call for more is such as to at least warrant the undertaking of another. The buildings are of concrete, faced with enameled brick and roofed with tile on open metal framework construction.

The Asphalt Block Pavement Company, of this city, has spent upwards of \$50,000 during the past year installing new machinery and in improving its plant. Toledo is now confronted with the problem of repairing several streets laid with asphalt block, manufactured by the Lake Erie Asphalt Block Company, which operated in this city some years ago. These two concerns have no connection other than that the present concern purchased the plant of the old company, but the present block is made entirely different, both as to size and material.

## BUFFALO AND VICINITY.

BUFFALO, N. Y., April 16.—U. S. Engineer Fiske on April 15 opened bids for constructing the remainder of the new Stony Point breakwater extension here. The Breakwater Company, of Cleveland, was lowest with a bid of \$51,298.75. The others were: Joseph Dunfee, Syracuse, \$55,884.25; MacArthur Bros. Company, New York, \$89,461.75; Great Lakes Construction Company, Buffalo, \$69,907. The contract will be awarded by the War Department. The Canal Quarry Company is now building about 650 feet of the breakwater. The whole job calls for an expenditure of \$185,000.

A plan to build a dam across Niagara River at Buffalo, to raise the water level of Lake Erie, is again being considered by the International Waterways Commission.

A subway will be constructed at Bailey Avenue and William Street, Buffalo, as a substitute for the Erie's grade crossing which exists there now. The subway will cost about \$300,000. The Buffalo Grade Crossing Commission instructed its engineer, Edward B. Guthrie, to prepare plans and specifications for the subway, and when these are completed, to advertise for bids for the work.

Architect Emerson C. Dell has prepared plans for a large malthouse to be built in Niagara Street for the George J. Meyer Malting Company. Concrete, brick and steel will be used. An office building will also be erected. The two structures will cost \$100,000.

The county farm at Binghamton, N. Y., will soon build a set of concrete coal bins, somewhat like those described in ROCK PRODUCTS for March.

L. Adler Brothers Company, of Rochester, will build a new clothing manufacturing building in that city. The plans call for the erection of a building of ornamental design, 202'x274' and four stories high, built of reinforced concrete. The estimated cost is \$175,000. The architect is Albert Kahn, of Detroit, and the engineer in charge of the building is Charles A. Alexander.

P. H. Secord & Sons, Limited, general contractors of Brantford, Can., have opened an office in Welland, Can., to build all kinds of reinforced concrete work.

Creditors and others interested in the assigned Colonial Portland Cement Company recently met in Toronto, Can. The plant is at Wiarton, Ont. The financial statement showed assets of more than \$500,000, while the liabilities outside of a bond issue are very small. A scheme of reorganization was given unanimous approval.

A bill has been introduced at Albany making provision for an issue of bonds not to exceed \$7,000,000 for the improvement of the Cayuga and Seneca canals and providing for a submission of the proposition to the people at the general election this fall.

New York State Engineer Frank Williams recently completed plans for the improvement of sections of the state barge canal, involving an expenditure by the state of between \$10,000,000 and \$11,000,000. The proposed work includes: Contract No. 20, dredging a channel in the Mohawk River between Little Falls and Rexford Flats, 58.7 miles; contract No. 23, constructing the land line from Kings Bend to the Genesee River, 5.63 miles; contract No. 30, constructing the river and land line from Little Falls to Sterling Creek, 14.62 miles; contract No. 42, construction of canal from Herkimer-Oneida County line to a point just east of Oriskany Road, 8.96 miles. The total mileage covered by these contracts is 87.91.

Great progress is being made in the Black Rock ship canal in this city. The Empire Engineering Corporation has the contract for clearing the channel from the foot of Porter Avenue out to the lake. A gigantic lock is to be built at the foot of Bridge Street. The coffer dam is now completed and the pumps have begun their task of draining the huge hollow within which the concrete walls of the locks are to be built.

"This lock when completed will have cost \$1,750,000, and will be one of the largest in the world," said Col. Fiske. "The contract calls for the walls to be finished by June 30, 1912."

The Buffalo Connecting Railway Company, has applied for the privilege of building a belt line about this city. The total cost of the railway, as estimated by Engineer Boardman, is \$7,313,851.89.

Kirby & Stewart, of Ottawa, Can., have been awarded a contract for the construction of a dam at the foot of Lake Temiskaming in connection with the Canadian government's plan for the establishment of storage basins on the upper Ottawa. The contract price is in the neighborhood of \$108,000.

Buffalo aldermen have approved the bid of E. M. Graves, of Cleveland, amounting to over \$300,000, for beginning the work of improving Buffalo River.

It is reported that a part of the \$10,000,000 which the New York Central is planning to spend in the

improvement of its terminals will be expended in improvements at the north end yards at Niagara Falls.

It is rumored that the Erie Railroad Company, which controls the Bath and Hammondsport line, contemplates an early extension of that branch from Bath, N. Y., to Hornell, N. Y.

The Aqueduct Building Company is planning to erect a fireproof brick building, seven stories and basement, at Rochester, N. Y. W. J. Brockett is the architect and the Gorsline-Swan Construction Company will do the building.

The National Erecting Company, of Groton, Tompkins County, N. Y., has been organized to do general construction business. The directors are J. H. Hoff, E. L. Hoff and E. A. Landon, all of Groton.

It is reported that Easenwain & Johnson, Buffalo architects, have prepared plans for a \$1,500,000 eleven-story hotel to be built by American capitalists, at Toronto, Can.

William S. Bricksell, a Buffalo architect, has been engaged to prepare plans for a grammar school to be erected in Hornell, N. Y.

An addition will be built to the Lafayette Hotel, Buffalo. Plans for the building are now being drawn by Bethune, Bethune & Fuchs of this city. They will call for a structure to cost about \$300,000.

Glick & Burgett, of Lorain, O., will build a high school at Le Roy, N. Y., for which \$80,000 has been appropriated.

Snyder & Gillett, of Niagara Falls, will erect a school building at Olean, N. Y. E. E. Joralemon, of Niagara Falls, is the architect.

Buffalo Odd Fellows will build a Fraternity Hall. Green & Wicks, Buffalo, architects, prepared the plans and Lincoln A. Willett of this city has the building contract.

Alexander S. Diven is to build a new house on West Church Street, Elmira, N. Y. Architect W. H. Miller of Ithaca, N. Y., is designing the residence.

A bill has been introduced at Washington providing for the erection of a federal building at North Tonawanda, N. Y., at a cost of \$150,000.

S. M. Hamilton, of Dunkirk, N. Y., has been elected vice-president and general manager of the Buffalo Builders' Supply Company.

Building in Buffalo is showing an improvement. For instance during March, 1909, building permits were issued by the bureau of building here at an aggregated estimated cost of \$664,000. For the same month last year 216 permits were issued at a cost of \$440,000.

### THE NORTHWEST.

MINNEAPOLIS, MINN., April 14.—The first month of spring finds things progressing with an unwonted rapidity in building lines, although quite free from any boom, and nothing that would be calculated to cause prices of materials and labor to go up with a spurt. Prices are strengthening on materials, and to a certain extent upon labor, though on neither is there any general advance, and it is to be hoped that there will not be any general upward movement, for it would tend to check the development which is now so nicely started. Conditions are fairly favorable.

There is a fair activity toward the erection of good sized buildings, and also the smaller structures which in numbers distribute more money than do the single large buildings which are handled by a few large contractors. Large office and business buildings, hotels and theaters are all in view in the Twin Cities, and promise an era of good substantial construction. News and Notes (6)

Both St. Paul and Minneapolis had healthy gains in building totals over a year ago for March, and that in spite of the fact that these cities did not suffer the depression a year ago that was so general in building. St. Paul had permits totaling \$772,998, against \$370,890, a gain of over 100 per cent. Minneapolis had \$752,320, against \$413,200, a gain of over 80 per cent.

The Twin City Brick Company has moved the St. Paul office and showrooms to rooms 703-708 Manhattan Building, where it has fitted up an outfit for showing its complete line of pressed bricks.

The Minneapolis Sewer Pipe Company, which is allied with the Red Wing Sewer Pipe Works, is about ready to start operations at its plant in Hopkins, nine miles west of Minneapolis. The city office has been moved to 729 Palace Building.

W. H. Whiting, of Minneapolis, is promoting a plan for the establishment of a large brick plant near New Ulm, Minn.

The Northern Cement and Plaster Company, of Grand Forks, N. D., which is an evolution from the Portland Pembina Cement Company, is manufacturing a flax straw fiber plaster for which exceptional merits are claimed. It is made from the company's hydraulic cement, with shredded flax straw added for a binder, and is ready for use with the addition of water only. The company claims for its plaster that it is the only fiber plaster which does not require

soaking before use. A patent has been applied for on the combination of adding flax straw to plaster, as a fiber.

Hoglund Brothers, general contractors of Minneapolis, have dissolved partnership, Isaak O. and Matthew O. Hoglund retiring. Charles and John O. Hoglund continue the business under the same firm style. This firm has done considerable construction work through the interior of Minnesota and North Dakota.

The Menomonie Hydraulic-Press Brick Company, Minneapolis, has just taken a contract to supply face brick for seven additional stories for the Flour Exchange Building, Minneapolis, now four stories high. This building was erected seventeen years ago, of Menomonie brick, and the new contract requires that the old brick shall be matched up exactly by the new.

William Pierce Cowles, for some years engineer on reinforced concrete work for the department of building inspection of the city of Minneapolis, has invented and patented a new form of reinforced concrete construction, which he calls the umbrella flat slab system. Its object is to give a stronger and better structure and to do away with the tee beams now in use substituting flat slabs integral with the supporting column. The columns are made continuous, and if spliced, a telescope splice is used in the umbrella head which serves to transmit the column loads from above to the center of the column below, and averts the possibility of eccentric loading being thrown upon the lower column.

R. J. Moulton and S. F. Evans, who have been with the Barnett & Record Company, of Minneapolis and Superior, have retired to engage in contracting for themselves, with offices at 406 Corn Exchange Building, Minneapolis.

The L. W. Northfield Company, of Minneapolis, has been incorporated to deal in building materials and other articles.

The pottery plant of the American Clay Products Company, in Northeast Minneapolis, recently had a fire which did damage to the extent of about \$6,000.

The Union Railway Storage Company, of Minneapolis, has taken the agency for the Twin Cities of the Black Hawk Clay Manufacturing Company, of Sears, Ill., which has heretofore maintained its own office in Minneapolis.

William Pierce Cowles, a Minneapolis engineer, has recently made a complete appraisal and report upon a prospective cement mill at Stanton, Powell County, Ky., for the Central States Portland Cement Company. He placed a price of \$100,000 on the tract, and of \$450,000 upon the mill as projected. His recommendation is to raise \$1,000,000 by bonds to cover the cost of the site, mill and operating cost for a year.

#### Building Items.

The Bailey-Marsh Company, general contractors, of Minneapolis, received the general contract for the new school building at Hibbing, Minn., at about \$82,000. F. D. Orff, architect, Minneapolis.

W. R. Parsons & Son Company, architects, Minneapolis, have plans for a \$25,000 brick building for Ed. Finch, of Virginia, Minn.

The H. N. Leighton Company received the general contract to erect a wholesale warehouse at Ninth Avenue South and Fourth Street, Minneapolis, to be occupied by the Kellogg-Mackay Company, wholesale steamfittering and plumbing supplies.

Harry W. Jones, architect, Minneapolis, has prepared plans for a \$30,000 brick building, to be erected for Maternity Hospital, Minneapolis.

F. H. Ellerbe, architect, St. Paul, has prepared plans for a modern six-story pressed brick and cut stone office building for the Citizens' Trust & Savings Bank of Aberdeen, S. D. It will be of fireproof construction throughout, costing about \$150,000.

Bids are being taken for the erection of the Gaiety Theater, on First Avenue North and Washington, Minneapolis, which will cost in the vicinity of \$150,000.

A. J. Blix, architect, Minneapolis, has completed plans for a \$35,000 brick sanitarium, to be erected by the Rosendahl Sulphur Springs Company, of Jordan, Minn. Only a portion of the building will be erected at present.

R. J. Cheney & Company received the contract to erect St. Mary's Greek Orthodox Church at Lake Street and Tenth Avenue South, in Minneapolis, for the Greek Church congregation. It will be of pressed brick and cut stone construction, and will cost about \$17,000. Boehme & Cordella, architects, Minneapolis.

The Deere & Webber Company, wholesale agricultural implements, 800 Washington Avenue North, in Minneapolis, are considering the erection of a building which will double their present structure, an eight-story building, about 160'x200'. Reinforced concrete construction will doubtless be used, when the company decides to build. No decision will be reached for another month.

Ingermann Brothers, St. Paul, have the contract to erect a handsome pressed brick residence for E. N.

Saunders on Summit Avenue near Farrington Street, to cost about \$25,000. Clarence H. Johnston is the architect.

Mark Fitzpatrick, architect, St. Paul, has prepared plans for a handsome memorial church, to be erected at Foley, Minn., by the Catholic society there, the money being a bequest from the late Mr. Foley. It will be of pressed brick and cut stone construction, and will cost about \$25,000.

Leuer Brothers, St. Paul, have resumed work on the Roman Catholic Cathedral, which is being erected on Selby Avenue and Summit. The foundations are well completed. The building complete will cost about \$2,000,000. E. L. Masqueray, of St. Paul, is the architect.

It is expected the plans will be out during the summer for the new Minneapolis postoffice building, which will cover a city square. The building will be on the plan of the Des Moines building, and will cover a ground area 300'x330', two stories and high basement.

Long, Lamoreaux & Long, architects, Minneapolis, are preparing plans for a handsome, elaborate residence for Alexander McLae, of Victoria, B. C., which will cost about \$150,000. It will be of brick, cut stone and terra cotta construction.

Charles F. Haglin, of Minneapolis, received the contract for a six-story and basement addition to the Hotel Radisson, Seventh Street, to cost about \$100,000. Long, Lamoreaux & Long, architects.

McLeod & Smith, furniture manufacturers, Minneapolis, are having plans prepared by Long, Lamoreaux & Long, architects, for an addition to their factory, five stories and basement, of reinforced concrete construction. Cost \$45,000.

Long, Lamoreaux & Long, architects, Minneapolis, have plans for a \$25,000 pressed brick flat building for T. J. Frederick, to be erected on Fourth Street, near Second Avenue Southeast.

E. J. Donahue, architect, St. Paul, has plans for a modern pressed brick church for the Catholic society of Fairfax, Minn., to cost \$35,000.

The Roman Catholic pro-cathedral building committee, Minneapolis, has taken new bids on revised plans for the superstructure of the building for Minneapolis, to cost \$700,000. E. L. Masqueray, architect, St. Paul.

The Chicago Bakery Company, of Minneapolis, will erect a modern bakery plant, to cost about \$75,000, of sand mold brick and cut stone trimmings.

The Chute Company, Minneapolis, has had plans prepared for a factory and power plant, to be erected on the East Side, at a cost of about \$60,000.

Harry W. Jones, architect, Minneapolis, has prepared plans for an additional building for the Minneapolis Bedding Company, of reinforced concrete construction, to cost \$50,000.

### MEMPHIS AND THE SOUTHWEST.

MEMPHIS, TENN., April 16.—Everything in construction and building supply circles of this city is moving off nicely for the spring. Summer outlook is good. Memphis real estate, after a twelve months' lull, is now affording much encouragement in its movements to real estate operators, bankers, financiers, builders and the citizenship in general. Within the last few days some transfers in business and residence properties have been recorded at surprisingly good figures.

Former State Senator Walter W. Tolbert, of the Memphis Asphalt and Paving Company, has formally announced himself as a candidate for mayor of Memphis. It is said in Memphis that he will have the support of Gov. Patterson.

The Clark Concrete Company, Goodwyn Institute, reports paving work in the suburbs as developing nicely this season.

Koehler Brothers, 68 West Court Street, are doing a paving, contracting and reinforced concrete contracting business, and have several jobs on hand.

The Weber Concrete Company, of Memphis and Chicago, did the reinforced concrete work on the new Y. M. C. A. building.

The Fischer Lime and Cement Company, Adams Avenue, reports: "Business has been good so far this year, considering certain adverse conditions to be contended with. We have added a new line of rubber roofing to our business. We have recently furnished supplies on the new Y. M. C. A. contract, the Jefferson theater, Barnes and Miller warehouse and other structures. We are handling several lines of cement, and expect to have Kosmos in a few days."

J. T. Forsythe, formerly in the building supply business on Front Street here, is now connected with the sales department of the Cubbins Lime and Cement Company, which firm is doing a large business.

The Memphis Granolith Company, 1087 Rayner Avenue, Memphis, has contracts for several stone residences, East.

## ROCK PRODUCTS

The W. P. O'Keefe Ornamental Stone Company is the style of a recent addition to the manufacturers in this city of ornamental and hydraulic stone. The plant is in the eastern part of the city.

The National Plaster and Material Company, lately incorporated by E. M. Forbes, R. P. Rowler and others, will construct a plant here on the Southern Railway with a capacity of twenty-five tons of plaster per day.

The Shawnee Rock Products Company, of Shawnee, Okla., has been incorporated with \$10,000 capital stock by H. G. Larsh, of Shawnee, S. P. Render, of Norman, Okla., and E. M. Dickerson, of Tecumseh, Okla.

### NASHVILLE AND THE SOUTHEAST.

**NASHVILLE, TENN.**, April 16.—Construction work in the city of Nashville is doing nicely at present. Quite a number of concrete block houses will be put up this spring and summer, and architects are now making drawings. Some complaint is heard over low prices on cement and building materials, but a good volume is being sold.

Several of the leading supply firms here are located in the extreme northeast section of the city proper, along the Cumberland River. There they have access to both river and rail for receiving and distributing purposes. They maintain downtown offices.

The Nashville Builders' Supply Company was visited by ROCK PRODUCTS' representative. The office and warehouse is located at 200-202 First Avenue North, near the river front. W. E. Jordan is president of the company, which deals in lime, sand and cement, fire clay and fire brick. The company also manufactures lime at kilns two miles out from Nashville on the Lebanon pike.

The warehouse system is one of the most commodious in Middle Tennessee. They also have stables for their teams. These stables for use of the company's teams have concrete floors, and everything about the plant is joined under one roof. The company carries, in addition to the other supplies mentioned, a full line of terra cotta and the Lehigh, Copenhagen and Red Ring cement. Wm. J. Adkison, Jr., is manager at the warehouse. The firm conducts three yards, and business is reported as very good for the month of April.

The Cumberland Valley Company, at Madison and Mill Streets, says that while the early spring trade was quiet, business is picking up right along. The company handles the Royal and Portland cement. Sand is taken from the Cumberland River. It maintains its own dredge boats, having now under contemplation the erection of a new steamboat which will ply the Cumberland. This firm has a fine patronage in Nashville and surrounding towns. In plaster lines it carries the Southern Wood Fibre and the Monarch. The downtown offices are in the Stahlmann Building, and Dan Lindsley presides over the same. This firm contemplates adding terra cotta to its line soon.

The Tennessee Masons' Supply Company, large contractors in plaster and other building material, with offices in the Arcade, reports a good business.

The Ryman Line of steamers here is to put up a concrete warehouse and elevator on the river bank at the city wharf, with platforms for loading and unloading at all stages of water. It will be of very great service to lumbermen. The project has been contemplated for two years past, but the United States government objected because the building and platforms would interfere with boats landing at the wharf. Certain stipulations were finally made by the government last week. These will be complied with, and the erection of the concrete structure will proceed as soon as the weather permits concrete work.

The Huntsville Concrete Company, of Huntsville, Ala., has received its concrete block machinery, the first of the kind ever brought to Huntsville. The plant will at first have an output of 300 blocks per day. The first concrete buildings will be put up at Gurley.

The Birmingham Lime and Plaster Company, of Birmingham, Ala., has been incorporated with \$81,000 capital stock. C. B. Rogers is president and J. H. Berry is secretary and treasurer.

The Nashville Builders' Exchange is doing a creditable work in the building trade here and along industrial lines generally. R. T. Creighton is president; Henry Griffin, first vice-president; Geo. M. Ingram, second vice-president; John Oman, treasurer, and Haynes McFadden, secretary.

The Foster-Creighton-Gould Company, 3 Berry Block, Nashville, is doing a large contracting business in reinforced concrete, etc. The company deals in crushed limestone for ballast and concrete work, having large limestone quarries of its own.

The Southern Bitulithic Company is doing considerable business from its Nashville headquarters over the entire South. It has paving contracts on hand from Louisville to New Orleans. Geo. M. Ingram,

vice-president of the Nashville Builders' Exchange, is at the head of this company.

The Nashville Concrete Company, of which W. N. McDonald is general manager, is doing considerable concrete work about Nashville this spring. Mr. McDonald is a man of wide experience, and was one of the engineers who recently had charge of some work at Havana.

The W. M. Leftwich Company, of this city, is developing a very good trade in granitoid sidewalks, concrete foundations, etc.

### CHATTANOOGA.

**CHATTANOOGA, TENN.**, April 16.—The Chattanooga building trade is showing up nicely this month. Many residences, business houses and hotels have been contracted for. Prices on building materials are relatively low, but work will be better in volume this year than last, though, perhaps, not equal to two or three years ago.

The Chattanooga Sand and Supply Company is supplying the building trade with a good deal of Tennessee River sand.

O. E. Deppen, manager of the Chattanooga Sewer Pipe and Fire Brick Company, successors to Montague & Company, was seen at his office here. Mr. Deppen said trade had been very dull in those lines, and he was afraid would be all summer.

The Chickamauga Quarry and Construction Company reports the season opening nicely. The company is furnishing the foundation work for J. L. Lupton's \$200,000 residence, the foundation work for Frank Spurlock's Riverview residence, and the Stone Fort Land Company business block. Also for W. E. Lowe's residence, Missionary Ridge. This company owns its own quarry and crushes its own stone.

The Howard Hydraulic Cement Company, Chamberlain Building, reports trade as good. The plant is at Cement, Ga., eighty miles south of Chattanooga. J. H. Warner is president. The company manufactures a slow-setting natural cement, used mainly for concrete foundations. The concern is now erecting a large bin holding about thirty carloads.

### LOUISVILLE.

**LOUISVILLE, KY.**, April 17.—Spring is actually here, business has begun to show signs of the activity which has been expected for some time. Although things are not yet as lively as they might be in the general building line, there are many good prospects being figured on, and the architects are making plans for numerous buildings of various sizes and kinds, some contracts having been let. Concrete construction particularly is evidencing strength, and the lines of roofing, asphalt and cement work of all kinds are active. Everybody is looking forward to one of the best seasons he has ever had.

Building in Louisville slumped a little in March. There were a greater number of permits, 352, as compared with 344 for the same month last year, but the estimated expenditure represented by them was only \$345,000 as compared with \$406,000 for the preceding period. Some of the big buildings in sight, however, are the \$600,000 office building, theater and music auditorium combined, which is projected for Fourth Avenue by Louis Seelbach, James B. Speed and John T. Macauley; a new five-story building to cost \$100,000 for the Business Woman's Club; new buildings for the Avery Plow Factory, which is to establish its plant in South Louisville and spend \$700,000 doing it; an addition to the power house of the Street Railway, and another big reservoir for the Water Company, to cost, it is said, in the neighborhood of \$300,000. The water company and the street railway company jobs will both be of reinforced concrete. Then there is the reinforced concrete job of building the underpass at Ninth and Oak Streets, which will cost about \$90,000. The city and the Louisville & Nashville Railway are having this done.

Jacob Ohligschlager, of the National Concrete Construction Company, said that while there are not many contracts actually being let, right now, there are so many prospects that one cannot help feeling that something will be doing before long. Right now the National is working on the McElroy building at Winchester, Ky., which is a five-story office building, and is finishing the packing-house building at Evansville. Mr. Ohligschlager is getting ready to figure on a lot of contracts in the next few weeks.

Business is fine, according to officials of the Central Concrete Construction Company. Not a great deal of big work is being done, but innumerable small jobs of pavements, porches and columns are serving to keep everybody busy. All are looking for a good year, as the prospects for building were never better.

The Louisville Cement Company is finding business fair, according to General Manager Gray, who said that while the sewer work is using up a lot of the

output of the company's mills, business in other directions hasn't developed very rapidly. The company has just issued a handsome booklet, containing many attractive illustrations of work done with its cement.

Vice-president C. Horner, of the Kosmos Portland Cement Company, said to ROCK PRODUCTS' representative that their plant renewed operations on April 10, almost exactly seven months after the fire at Kosmosdale. It started up with a full force and with the plant containing many minor improvements and having a somewhat enlarged capacity. Among the changes which were made is an improved method of handling the clinker, and improvements in the method of mixing the material, as well as the construction of the whole plant, being entirely without wood, steel and concrete having been used throughout. On account of an increase in business, an additional siding into the plant from the Illinois Central has been constructed. C. M. Timmons, sales manager, is now out in the field taking orders for cement, and Mr. Horner said that a remarkable feature of the period of enforced idleness was that the business of the company was not only held practically intact, but some new trade created. The Freeborn Engineering Company, of Kansas City, planned the engineering work for all the improvements, which were under the supervision of C. M. Dugan, Jr., manager of the company, and he was entrusted with the entire task of reconstruction. H. C. Tiedemann, superintendent of the mill, was in immediate charge of the work. Mr. Horner said that a sales branch for the local trade will probably be established in Louisville in the next few weeks.

The National Roofing and Supply Company is getting a lot of business, and though the bulk of the work is not large, it has volume that is decidedly pleasing. Concrete work, including foundations, walks and porches, was done on the handsome residence of George A. Shulten and the Gate mansion at Kenilworth. Roofing is active just now.

A big job involving roofing, insulation and cement work has just been landed by the Ingram Roofing and Asphalt Company for the Buechel Ice and Cold Storage Company. Roofing is looking up some, according to Mr. Ingram, though asphalt is rather quiet just now.

Business with the Atlas Wall Plaster Company is reported as fair, with building brisk. The future looks promising, and it is expected that there will be enough building this season to keep all hands going.

The plant of the Kentucky Wall Plaster Company down on the river front is wearing an air of activity these days, and everybody seems to know that the "Campbells are coming." They are coming strong, too, as business is piling up and prospects and inquiries are as numerous as present orders.

Building is beginning to open up some, and that accounts for improved business, according to those at the Ohio River Sand Company's offices. It is not what it ought to be yet, though, they say. The new boat has been put on the job of getting out sand, and a good deal of material is being taken out.

Business is poor, with prospects unfavorable and the outlook cloudy, according to Burrell & Walker, the fire brick people. They can see nothing doing in their line just now.

The Louisville Fire Brick Works has rebuilt about half of its plant, which was damaged recently by fire, and expects to have the remainder completed in about three weeks. Business has improved and is considerably better than this time last year. The plant is being put up in better shape in the process of rebuilding, though no marked changes are being made.

S. F. Troxell is doing a lot of roofing work. He is putting on the roof for the addition to the sheep-pens at the Bourbon stockyards, and has the contracts for roofing buildings of the Mengel Box Company at Hickman, Ky., and at their Tennessee plant. Ed. Troxell is figuring on a lot of concrete work and looks for a prosperous season. There is a lot of repair work being done in the roofing line also, said S. F. Troxell.

Bids have been received on Section G of the Southern Outfall sewer, and it is expected that the contract will go to Blackstaff & Company, Philadelphia. It is a \$100,000 job, and extends from Ninth and Hill Streets to Seventh and Daviess Avenue. The contract for the construction of Section A of the Middlefork sewer was let by the Sewerage Commission to Henry Bickel Company, of Louisville. The Cincinnati Southern Railroad, which runs through central Kentucky, is planning the construction of a reinforced concrete bridge over the Kentucky River where High Bridge now is. It will cost nearly \$1,250,000 and will be the longest single arch in the world. The present structure is 1,138 feet long, supported by two piers which practically divide the total length into thirds. It is steel and was built in 1877 at a cost of \$400,000.

The courthouse of Jefferson County is being given a coating of cement plaster. The stone walls are being chipped to make a good plastering surface. The contractor finds this a losing venture because of difficulty in chipping the stone, which is a very hard crystalline limestone from Indiana. The whole work is to be done for \$3,000.

The Traffic Club of Louisville has been organized, and many men interested in building and allied trades are enlisted in the organization. Among them are P. Bannon, Charles Horner, C. M. Timmons, and others.

One of the exhibits at the Southern Electrical and Industrial Exposition, now on here, is that of the Builders' Exchange. A feature of it is a collection of photographs and drawings showing buildings designed and constructed by Louisville men. It has attracted attention. The Builders' Exchange is interested just now in having the Advisory Tax Commission take proper steps to conserve the building interests. A special committee, of which Webster Gazlay, chief engineer of the Water Company, is chairman, is working on a new building ordinance for which the New York measure is to be the model.

### KANSAS CITY.

KANSAS CITY, Mo., April 14.—The Portland cement companies of this city are expecting this to be a good year. Up to the present time the business has varied largely with the weather, which has not been very favorable for building operations, and still there has been a pretty steady demand for cement. With the increase in building which is to come, according to the reports of the architects, there is going to be a good business in this line.

All kinds of building material are improving in demand now, as the building season is on, and this spring the building operations are of even more varied character than usual, ranging from the small cottage to the big residences, hotels, office buildings, business buildings, etc. The demand for brick is greater than the supply, and the price has advanced since the first of the year \$1.50 per thousand, and local brick yards say that the day of cheaper brick has passed, as there is no longer fear of cheap gas burned Kansas brick coming in this market, for the Kansas plants are paying more attention to paving brick, face brick, etc., and are not turning out a surplus of common brick, which they must dump at any price; and then there is a big demand for their common brick in other directions. Kansas City has always been the dumping ground for the Kansas gas belt brick plants, and when there is nothing to dump, the shipments in this direction are small.

J. H. Stone, who has the general contract for the Oppenheim Building, corner Twelfth and Walnut, has decided to make use of Bonner Portland cement, and the building will soon be under way.

The Bonner Portland Cement Company reports having just finished making delivery of the cement for the eleven-story Campbell Building, which is being being erected in Oklahoma City, Okla.

The Ash Grove Portland Cement Company seems to have secured quite a corner on the cement business in the stockyards neighborhood. The building of the Drover's Telegram is to be built of concrete in which this cement is used, as is also the new White & Dreyfoos Hotel building, and from 3,000 to 6,000 barrels of this company's cement will be used in the construction of a dyke along the river front by the stockyards company itself.

George E. Nicholson, president of the United Kansas Portland Cement Company, of Iola, Kan., paid the main office in Kansas City a visit of a couple of days this week.

The Kansas City Brick and Stone Company is just adding a No. 5 Austin crusher to its plant at Sugar Creek, and is now well prepared to handle crushed stone with the greatest economy. The company has laid about five miles of railroad connecting its plant with the near-by railroad lines, and will soon begin work on its brick plant. It has just received a lot of sample brick, made from its shale and clay by another plant, and if the regular product comes up with the samples there is no question about the company's brick business being a success. Machinery is also to be installed to grind the shale, to be sold for an asphalt filler, etc. The shale being used lies in a thick bed directly under the rock which is being taken off the ground for the crusher, so the brick work will follow up the rock work.

Plans are being prepared for a brick and reinforced concrete apartment building, to be erected on the corner of Fifteenth and Charlotte Streets by T. L. Timmons, and to cost about \$15,000.

W. P. Cooper has taken out a permit for the construction of an eight-apartment brick flat, to be located at 4140-46 Warwick Boulevard, to cost about \$30,000.

Moriarty & Company have work well advanced on their new \$25,000 garage at 1508-10 Grand. The structure is of steel and concrete and will be three stories high.

A. Van Brunt & Company are preparing plans for a reinforced concrete warehouse, to cost \$18,000, and to be erected by the Long Realty and Building Company at St. Louis Avenue and Hickory Street.

The Vogel Tool Company is soon to let the con-

tract for a reinforced concrete building, to be erected at Nineteenth and Campbell. The building is to be finished within five months.

The Oak Park Land Company is having plans prepared for fifty residences, no two of which are to be alike, and the price of which will average \$3,200, to be erected on the company's tract in the vicinity of Fortieth and Chestnut. It is the expectation to build 176 houses in this addition.

Thomas Wilson, a former building contractor of Kansas City, has returned here, and will erect a couple of flats on the corner of Linwood and Garfield Avenues.

Fairbanks, Morse & Company have purchased a tract of ground 48'x130', on the southwest corner of Twelfth and Wyoming, and will erect a \$60,000 reinforced concrete building thereon, to be used as a warehouse by the Kansas City branch.

J. G. Murphy is about to erect three-story and basement reinforced concrete building on his property at 2010-12 McGee Street, which he has already leased to the Philip Carey Roofing Company for a term of twelve years.

James Flanagan has begun the erection of a reinforced concrete warehouse at 1724 West Ninth Street, to have six stories and a basement and to contain 60,480 square feet of floor space.

The wholesale liquor firm of S. Hirsch & Company has secured a 99-year lease on the tract of land at 1513 and 1515 Main street, and a building of at least five stories is to be erected thereon for the accommodation of their business.

The board of public works has let contracts for some five miles of concrete sidewalk. The bidding for the work was very active, and the average price was 12½ cents per square foot.

Louis Curtiss, an architect of this city, has just completed plans for the new depot to be built by the A. T. & S. F. R. R. in Wichita, Kan. The structure is to be one story high and 222'x60', and will be of reinforced concrete finished in enameled terra cotta, with interior finished in tiling.

J. C. Dold, of the Dold Packing Company, of Buffalo, N. Y., which formerly had a packing plant in this city, and still owns the tract of ground, was a recent visitor to this city, and stated that they would begin the erection of a large warehouse here this fall, to cost about \$150,000, and to be used for general warehouse purposes.

The Great Western Portland Cement Company's plant at Mildred, Kan., is reported to have begun operation a couple of weeks ago. The opening of the plant was the occasion of a general holiday in Mildred, and Clayton McLaughlin, general engineer and superintendent of the plant, was presented with a gold watch, as an appreciation of his past services.

Active work is at last in progress on the reinforced concrete building of the Gloyd Lumber Company, at 921-23 Walnut Street. This building was planned a couple of years ago to be eight stories high, but building was delayed on account of the lack of settlement of the lot line with the adjoining lot.

The plans now call for a twelve-story building. F. E. & A. M. Gloyd, who compose the Gloyd Lumber Company, have announced that they have sold out their entire retail lumber holdings to their brother, S. M. Gloyd, of Oklahoma City, and will devote their attention in the future to developing their real estate in this city, and also in parts of the South.

The Western Terra Cotta Company, of Kansas City, has landed the contract for the terra cotta to be used in the construction of the New Landers Theater, in Springfield, Mo.

Architect J. H. Felt has prepared plans for a brick and stone trimmed schoolhouse, to be built at Higginsville, Mo., at a cost of \$20,000.

The Kansas City Stockyards Company has begun the erection of a permanent pavilion, to be used by the Royal American Live Stock Show each fall. It is to be of 140'x400' dimensions, and of concrete and steel construction, and will have seating accommodations for 7,000 persons, with a show ring 90'x250'.

Plans have been prepared in this city for a two-story reinforced concrete residence, to be built by M. L. Beason, of Dodge City, Kan., and to cost about \$7,000.

The city council of Kansas City, Kan., has just granted a franchise to the Kansas City Junction Railroad Company for terminals, and also a site for a depot, upon which the company agrees to erect a building of stone, brick or concrete, to cost \$25,000.

Plans have been prepared for a residence to be erected by T. J. Green, to cost about \$30,000. It will be three stories high, of brick, and an asbestos shingle roof will be used.

Plans are being prepared by Keene & Simpson, of this city, for the Commercial Club building in Wichita, Kan. It is to be four stories high and constructed of brick, stone and terra cotta. The cost will be about \$70,000.

An addition is to be built to the St. Margaret Hospital, in Kansas City, Kan., which will accommodate

a hundred or more patients, and the walls of which will be of brick and stone, while the floors will be of reinforced concrete.

Over in Kansas City, Kan., the superintendent of buildings reports that he issued ninety building permits in March, with a total value of buildings of \$64,530, and sixty-three of the permits were for new buildings.

The Eisentraut Company reports that it is preparing plans for a \$35,000 schoolhouse, to be erected in Woodbine, Ia., to be of brick, with tile roof.

O. M. Connet, president of the Monarch Cement Company, of Humboldt, Kan., is having plans prepared in this city for a two-story fireproof reinforced concrete residence, which will be erected in Humboldt.

Mrs. A. T. Cole, of 1317 Benton, is having plans prepared for a two-story stucco residence, to cost about \$3,900.

E. C. Champion, general superintendent and chemist of the United Kansas Portland Cement Company, has been in Kansas City this week, accompanied by W. W. Wheeler, superintendent of the Independence plant.

The Ash Grove Portland Cement Company reports having furnished the cement for the postoffice building which is being erected in Newton, Kan., and the same company is now furnishing cement for the big Main Street viaduct, past the new Union Depot site in this city.

The Anton Webber five-story apartment buildings at Tenth and Tracey, for which George Braecklin is architect, are to be built of Bonner Portland cement.

T. M. Magiff, of the Atlas Portland Cement Company, was a visitor to Kansas City this week, and is of opinion this will be one of the best years Portland cement has ever had.

The Land Construction Company, which has the contract for building three large reinforced concrete sewers in St. Joseph, Mo., has decided to make them of Ash Grove Portland cement.

The Lumbermen's Portland Cement Company is reporting steady work on its plant. The power house is to be entirely completed within a couple of weeks.

W. J. Stewart, western manager of the Marble Head Lime Company, reports a good business in lime since April 1, and he is especially well pleased with the business he is booking on the hydrated lime. He says that contractors are fast catching the idea that the use of hydrated lime is saving them money in the matter of labor, as it does not require the long stretch of work by a gang of men to put it into condition to go into the walls, and can be handled right in the building, in case it is harder to handle it in that manner than in the street. Another thing which appeals to the contractor who has tried the hydrated lime is the fact that it is so readily mixed with Portland cement, when the combination mortar is wanted, the lime and cement being mixed dry, then the sand added, and the water last.

The Bonner Portland Cement Company held its annual meeting at Bonner Springs, Kan., on April 6, and over 250 of the stockholders were present. Before the meeting was called to order in the opera house the stockholders were shown over the entire plant and were served with luncheon at the leading hotel. All of the old directors were reelected for the coming year, and two new ones added to the board, Philip Graff, a capitalist of Beatrice, Neb., and L. P. Kindred, a banker of Bonner Springs. The old officers were also reelected.

### ST. LOUIS.

ST. LOUIS, April 16.—While during the past month there have been no developments pointing to the erection of more than three new buildings of exceptional size and cost in the downtown or business district, there are several quite extensive structures in that section on which work is now being resumed, after being in some cases suspended during the winter. In the residence and in the factory district, there is not only great activity, but announcements are being made every week of further building operations. Dealers in all kinds of building materials, hardware, plumbers' supplies, structural and architectural steel and iron, all report an increased demand.

A group of apartment houses, to cost over \$1,000,000, are to be erected in Morrison's Addition to Tower Grove Heights by Liman Buckel. They will vary widely in design, and will be in different colors of brick, with terra cotta trimmings.

Work has been begun on the Warwick Court Apartments. The structure will be five stories high. Charles H. Deitering is the architect. The Warwick lot is located on Kingsbury Terrace at Clara Avenue. The grounds, fittings and building will cost over \$200,000. The building will have three entrances. It is renaissance in style, red brick with dark sunk joints, and trimmed with white glazed terra cotta, with ornamental balconies over the entrances.

A ten-story building costing about \$500,000 is to be erected on the corner of Olive and Seventh Streets with a frontage of 102' on Olive Street by a depth

## ROCK PRODUCTS

of 88' on Seventh Street. The lower three stories will be adapted for a retail dry goods business, and the upper stories will be fitted up for offices.

J. I. Epstein will erect an apartment building on the corner of Cates and Belt Avenues, to cost about \$80,000. The building will be a three-story brick with stone trimmings. Plans have been prepared by Henry Wagner, of the E. L. Wagner Construction Company.

The Mississippi Valley Iron & Furnace Company is arranging to let the contracts for its new plant to be built at South St. Louis, which will cover in all about forty acres and cost upwards of \$500,000. The new industry represents the outlay in capital of \$1,500,000. The capacity of the industry will be about 300 tons of ore per day, and it will employ about 300 men.

Work to cost \$200,000 or more will begin at once on the treatment of what is known as Government Hill, in Forest Park, the former site of the government building at the World's Fair, in order to restore and beautify the grounds. George E. Kessler, the city's landscape architect, plans to make a scene of almost unsurpassed loveliness, and visitors to the great Exposition will recall the remarkable aid which nature had afforded at this point, through hill, dale and water effects.

The Laclede Company is making a severe test of a St. Louisian's invention on Chippewa Street. The machine digs gas trenches, doing the work of many laborers. If a contractor or engineer six months ago had been told that machine was possible that would cut out a trench twenty feet deep at the rate of thirty linear feet per hour, leaving the sides and bottom of the ditch as smooth and clean as though cut with a knife and at the same time distributing the dirt in a neat ridge at the side of the trench, ready for refilling, these parties would have smiled incredulously. Yet such a machine, invented by John Helm, has been used for the past two months by the Laclede Gas Company in laying a high pressure belt line on Chippewa Street.

M. R. MacKinnon, sales agent Continental Portland Cement Company, states the demand for cement has steadily improved, doubtless stimulated to some extent by an advancing market, until now the company is sold over 25,000 barrels ahead. Their brand, which is known as "Continental," is giving excellent satisfaction, and is meeting with a good sale, particularly so in the South.

The Hunkins-Willis Lime and Cement Company state that spring business is opening up very satisfactorily—far better than at this time last year. There will be, Mr. Willis says, a good demand for the Peerless white finishing lime produced at the company's plant at Mosher, Sainte Genevieve County, Mo., which furnishes all the white finishing lime used in St. Louis territory and is acknowledged to be equal in quality to any product of the kind in the United States. It is also shipped to Colorado, Kansas City, St. Paul and New Orleans and the intermediate country. They are building two additional kilns in anticipation of increase in the demand. Sales of Atlas Portland cement are large and at better prices. In the building specialties department, F. A. Cammann, manager, reports a fine business doing in waterproofing, reinforcing, metal lath and other material.

The Glencoe Lime and Cement Company has removed its general offices to a fine suite of rooms on the ninth floor of the Syndicate Trust Building. This proposed change was announced in the March issue of ROCK PRODUCTS.

H. M. Duck, treasurer of the Meramec Portland Cement and Material Company, states good progress is being made with their Mississippi River sand plant at the foot of Dock Street. The dredge boat and three barges are here, and it is expected to have the plant in operation by June 1. The capacity of the plant will be forty cars per day. At Sherman, Mo., the erection of the company's Portland cement plant is making progress, most of the concrete bases for the machinery being in place, and they are getting deliveries of the machinery. Referring to the sand and gravel plant on the Meramec River at Sherman, Mr. Duck said both the barges are now up at the plant, which will enable the company to largely increase their deliveries of sand and gravel.

Business at the office of the Universal Portland Cement Company, in the Chemical Building, is, Mr. Quebberman states, assuming satisfactory proportions. The territory covered by the St. Louis branch of the company is quite large, and most of the orders are coming from the country, the city trade being principally supplied by the local plants.

The comparatively open winter resulted in enabling the Union Sand and Material Company to secure considerable business right along, but now that the building season is on in earnest, orders for sand, gravel and cement are keeping the management mighty busy. In the cement department, the city and country trade are good buyers. This activity in the cement market is explained by the fact that dealers allowed their stocks to run down as winter drew nigh, and with the

coming of spring began sending rush orders for cement. In the sand and gravel department, Mr. Homer appears to have determined that the reputation of the company for filling orders with almost incredible promptness shall not be allowed to suffer as long as the supply in the Mississippi and Meramec Rivers holds out.

The Acme Cement Plaster Company is now settled in its spacious and numerous offices in the Bank of Commerce Building. Trade has been so good that the company is sold 'way ahead.

The Corrugated Bar Company is now occupying a fine suite of offices in the Bank of Commerce Building. Mr. Counselman says the outlook in the country at large with respect to business in reinforced cement structures is quite satisfactory, and the severe losses sustained by fires is turning the attention of property owners to the necessity of the best possible safeguards against fire in case of new buildings in which they intend to be interested, and thus enable them to secure the lowest rates of insurance.

The St. Louis Gravel and Sand Company, Richard G. Mincke, general manager, is making good progress in establishing its plant at Valley Park, Mo., on the Meramec River. Mr. Mincke says they have two barges completed and floating. The hull of the dredgeboat has been built and is ready to have the machinery installed. The locomotive crane is on the ground, and the balance of the machinery requisite for handling gravel and sand is due to arrive by May 1. The company expects to be ready for business early in June.

## THE WEST COAST.

SAN FRANCISCO, April 8.—The concrete industry on the Pacific Coast is steadily becoming more and more independent of the building situation in the larger cities, owing to the enormous increase in its use during the last few years for all kinds of development work in the country, and particularly in the new districts that are being opened up to settlement by irrigation and reclamation projects, so that even if the rebuilding of San Francisco should meet with further delay, as it did last summer, the cement mills in California would be comparatively little affected, and the rock crushing industry would not suffer except in this immediate vicinity. The new Los Angeles water supply system is taking large quantities of concrete, and it is being used on an increasing scale wherever irrigation work of a permanent nature is being installed. The new Hetch Hetchy water system for San Francisco, which will probably be carried out within a few years, will require enormous quantities. Owing to the floods of last winter, it is planned to reinforce the levees along the Sacramento River with concrete in many places, and this work, in addition to the construction of many concrete bridges in that section, will probably be started this year. In all the larger towns of the Coast, moreover, heavy concrete foundations are now being laid for all bituminous pavements, and such foundations are becoming more common every year for ordinary stone pavements.

The local building situation, however, is by no means a matter for discouragement. The valuation of building contracts closed in March is \$2,956,308, compared with \$2,871,495 for February, and while the proportion spent on permanent structures is smaller, the amount of concrete used, counting foundations for frame buildings, is a little larger than earlier in the year. The March building permits in Oakland amounted to \$395,650. In Portland, Ore., building is decidedly active, with work now under way on the \$3,000,000 packing plant of Swift & Company, and several large municipal improvement projects in prospect.

About the most important work now under way in San Francisco is the improvement of the harbor by the construction of a number of new steel and concrete docks. Several piers have already been built, using reinforced concrete piling, and concrete floors reinforced with steel beams. Bids are now being received for Pier 36, which will cost about \$435,000, and will be 438' long and 201' wide. Work is now under way on Pier 24. A contract for the construction of 1,000' of concrete bulkhead and retaining wall along the waterfront will come up in May or June, and another similar contract for the site of a new ferry building will come up a little later. The governor has just signed a bill for a \$9,000,000 bond issue for further harbor improvements, and another for a bond issue of \$18,000,000 for the improvement of the roads of the state.

Bids on the new Normal School at San Jose, Cal., are to be received April 24, the building to cost about \$300,000. The U. S. Army engineer in San Francisco has called for bids, to be opened May 14, for 25,000 barrels of Portland cement for improvements in the Presidio.

The Santa Fe Railroad has announced its intention to immediately reballast its tracks for 110 miles be-

tween Fresno and Bakersfield, Cal., with crushed rock. The work will cost about \$500,000, and it will be the first crushed rock roadbed in the San Joaquin Valley.

The first carload of Mount Diablo cement from the new factory of the Cowell Portland Cement Company, at Cowell, in Contra Costa County, Cal., was shipped March 31. This is the commencement of quite a heavy tonnage from the new factory, as the shipments will be increased until the full output of the plant is shipped every day. The output is practically sold up for some time to come. The company reports conditions in the cement market generally improving, and expects a great demand for all purposes this spring and summer.

The Holmes Lime Company, which handles the output of the Pacific Portland Cement Company, reports a heavy movement this month. B. W. Dennis of this company states that the factories are behind on their orders, and are all working to their full capacity.

The Holmes Lime Company reports the lime market in a very satisfactory condition, with satisfactory prices, and indications that the present figures will be well maintained throughout the year, as the various manufacturers seem to have awakened to the fact that there is no profit in a price-cutting warfare.

The Holmes Lime Company's Vigorite brand of hydrated lime is now being extensively used as an admixture with Portland cement, and the regular proportions of sand and crushed rock for making concrete waterproof. The company is working on an extensive campaign of education along this line by mailing data from prominent eastern and European authorities, as well as Pacific Coast tests, to architects, consulting engineers and concrete contractors, proving the advantages of an admixture of hydrated lime to Portland cement for making concrete work waterproof. This work has been favorably taken up by architects and engineers, and is opening up a large field for hydrated lime.

The Marysville Sand, Cement Brick and Block Company, of Marysville, Cal., has about completed its new hoisting machinery, by which it raises sand from the bed of the Yuba River to the cars, and will soon resume shipments on a larger scale than ever. There is a large demand for the Marysville sand all over the central part of the state, and occasional shipments are made as far as Portland, Ore.

The Granite Rock Company, of Watsonville, Cal., is awaiting the arrival of three carloads of new machinery ordered last month to fill a contract with the Southern Pacific to furnish crushed rock for track ballast. The company will have a capacity of forty carloads a day with the new equipment. The plant is to be run by electricity.

President George Cameron, of the Santa Cruz Portland Cement Company, made a visit to the plant near Santa Cruz, Cal., last week. The plant is now employing 400 men, and all the new equipment is in full operation.

Johns & McLean, of San Mateo, Cal., have started operations with a large rock crusher near Crystal Springs.

Manager Gould, of the Western Gypsum Company, of Reno, Nev., states that laws recently passed by the Nevada legislature providing for an eight-hour day for miners may necessitate the closing down of the plant. The company has been offered a 10-acre tract and a bonus of \$40,000 to locate in Sacramento, Cal., and will probably move its works to that city.

The Inland Empire Portland Cement Company has been organized at Spokane, Wash., with a capital stock of \$1,000,000, and is backed by men connected with the Lehigh Valley Portland Cement Company, of Allentown, Pa. The company has acquired extensive lime deposits and water rights on Sullivan Creek, and will probably begin developing the water power for the cement mill within the next month. A mill with a capacity of 2,000 barrels per day will be erected as soon as railroad connections can be made. The mill will be operated by direct water power.

The Delaney Concrete Manufacturing Company has started a factory for concrete shingles in Alameda, Cal., and proposes to open similar factories in San Francisco and Berkeley.

The quarry and stone crusher of the Merced Stone Company, which furnished a large proportion of the crushed rock used in the southern San Joaquin Valley, has started up after being idle for about a month for repairs. Considerable new equipment has been installed.

The Kittle Construction Company has taken a contract for a \$34,000 concrete warehouse for Owens & Unger.

A five-story concrete building, to cost \$60,000, is to be erected at once for the Harry J. Moore Furniture Company.

The Oroville Water & Light Company is planning to establish a cement plant near Pentz, Cal., where it owns a deposit of cement material.

ALL THAT THE NAME IMPLIES  
**SECURITY**  
 PORTLAND CEMENT.

"BETTER THAN OUR SPECIFICATIONS REQUIRE"  
 B. T. FENDALL, City Eng., Baltimore.

"OUR TEST IS QUITE SEVERE. CONGRATULATE  
 YOU ON THE EXCELLENT SHOWING MADE."  
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FOR } Ornamental Concrete Stone  
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The location of the plants with reference to transportation facilities, combined with a daily output of 17,000 barrels, now being increased to 23,000 barrels per day, insures the most satisfactory service in the matter of prompt shipments.



Daily Output 17,000  
 Barrels, increasing to  
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## The BATES VALVE BAG

The strongest and most perfect  
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 IT IS WATER PROOF!

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GUARANTEED  
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SANITARY  
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**WHEELING WALL PLASTER CO.**  
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### Meeting of American Society for Testing Materials.

The twelfth annual meeting of the American Society for Testing Materials will be held at the Hotel Traymore at Atlantic City, N. J., on Tuesday to Saturday, inclusive, June 29 to July 3, 1909. Secretary Edgar Marburg, of the University of Pennsylvania, announces that the coming meeting is to have a program of great significance to the future of structural material.

### Spring Meeting of the American Society of Mechanical Engineers.

The American Society of Mechanical Engineers will hold its spring meeting in Washington, D. C., May 4-7. Professional sessions will be held at which papers on the conveying of materials, gas power engineering, steam turbines, the specific volume of saturated steam, oil well pumping and various other subjects will be discussed.

At the reception, which will be held in the New Willard Hotel, an address of welcome will be made by the Hon. B. F. Macfarland, president of the board of district commissioners, with response by Jesse M. Smith, president of the society.

During the convention, President Taft will hold a reception for the members at the White House. The war department will give a special exhibition drill of the U. S. troops at Fort Myer, to which the members and guests will be invited. At the same time, if the conditions are favorable, an ascension of a dirigible balloon will be made, and probably also that of an aeroplane.

An address will be given by Rear Admiral Melville, retired, past president of the society, and former engineer-in-chief of the navy, the subject being "The Engineer in the Navy." This evening will be made the occasion for the presentation to the National Gallery of a portrait of Rear Admiral Melville presented by friends and admirers. It will be received for the National Gallery by Dr. C. D. Walcott, secretary of the Smithsonian Institution.

F. H. Newell, director of the reclamation service, will deliver an illustrated address on "Home Making in the Arid Regions." Trips will be made to various points of interest about the city, and a number of pleasurable excursions have been planned.

The papers to be presented are as follows:

A Unique Belt Conveyor—Ellis C. Soper.

Automatic Feeders for Handling Material in Bulk—C. Kemble Baldwin.

A New Transmission Dynamometer—Prof. Wm. H. Kenerson.

Polishing Metals for Examination with the Microscope—A. Kingsbury.

Marine Producer Gas Power—C. L. Straub.

Operating System for Small Producer Gas Power Plant—C. W. Ober.

A Method of Improving the Efficiency of Gas Engines—T. E. Butterfield.

Offsetting Cylinders in Single-Acting Engines—Prof. T. M. Phetteplace.

Small Steam Turbines—Geo. A. Orrok.

Oil Well Tests—Edmund M. Ivens.

Safety Valve Discussion.

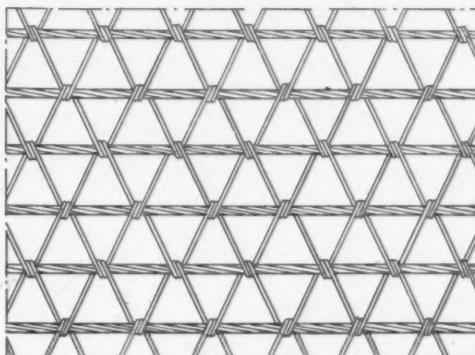
Specific Volume of Saturated Steam—Prof. C. H. Peabody.

Some Properties of Steam—Prof. R. C. H. Heck.

A New Departure in Flexible Staybolts—H. V. Wille.

### Interesting Test on Floor Span.

At the recent Canadian Cement and Concrete Show, held in Toronto, Ont., the United States Steel Products Company made a test on a reinforced concrete floor span. The exhibit was in charge of A. D. Level, of the New York office, assisted by B. H. McEwen, of the Buffalo office, A. W. Allen, C. B. Rittenhouse and George Childs, of the Montreal office. The test was



STYLE NO. 42 TRIANGLE MESH REINFORCEMENT USED IN FLOOR SLAB TEST OF UNITED STATES STEEL PRODUCTS EXPORT COMPANY AT TORONTO CEMENT SHOW.

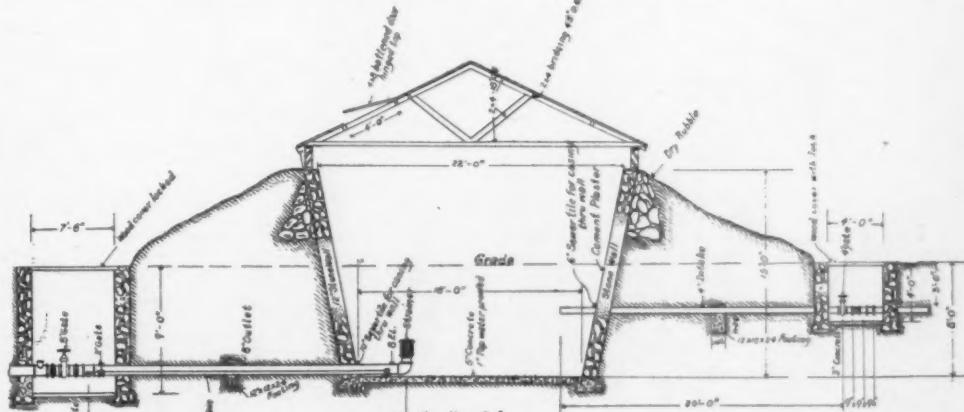
conducted by W. G. Swan, B. A. Sc., of the University of Toronto.

His report on the test is as follows:

The accompanying sketch gives the dimensions of the floor slab and indicates the method of abutment support, a steel framework of I-beams and channels being used for the purpose. The style of reinforcement employed and its position in the slab is also indicated. The following additional information in connection with the slab is worthy of note:

Mixture: The concrete was a 1:2:4 mixture of National brand of Portland cement, coarse and fairly clean pit sand, and one inch limestone aggregate. The mixing was done by hand, much care being taken to make it thorough. Age of concrete, 35 days.

Reinforcement: The reinforcing material known as the "Triangular Mesh" was cold drawn O. H. steel with a guaranteed ultimate strength of 60,000 pounds per square inch.



CROSS SECTION OF POST CITY, TEXAS, WATER RESERVOIR DESIGNED AND CONSTRUCTED BY THE DOUBLE U COMPANY.

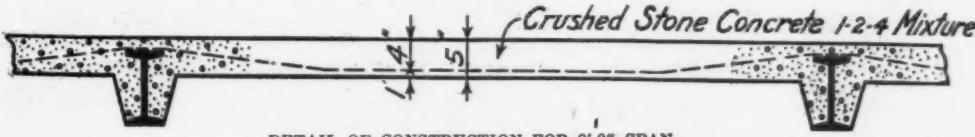
The percentage reinforcement is very low, being only one-quarter of 1 per cent. It will be seen from the accompanying sketch the diagonal wiring system carries the intermediate stresses to the heavier longitudinals, whence they are transferred to the abutments.

The loading of the floor slab was accomplished by the use of pig iron, each piece being weighed before being put in place. The pig was loose piled in an effort to overcome the arching effect of the load. The following load-deflection table gives a good idea of the behavior of the floor slab under stress:

Total load (pounds).	Total load (pounds per sq. ft.).	Total deflection (inches).
0	0	0
12,170	254	.07
21,830	455	.16
34,300	715	.35
40,300	840	.48
52,900	1,100	.87

The first cracks appeared in the slab at a load of 34,300 pounds. Failure occurred at the ultimate load.

In summing up the tests the results may be said to be very satisfactory, especially since the floor slab was designed to carry a uniformly distributed load at 30 days' time of only 110 pounds per square foot, with a safety factor of four. As we may note the values obtained are more than double the guaranteed capacity of the floor slab, and although the deflection above the 34,000 pounds total load mark are high, this is accounted for to some extent by a slight turning over of one of the abutment I-beams, due to loose bolting. It is the writer's opinion that the triangular mesh is especially suited to floor reinforcement, on account of its natural tendency to distribute the load and the comparatively small amount of steel required.



DETAIL OF CONSTRUCTION FOR 8'-0" SPAN.

### VILLAGE WATER SUPPLY

Type of an Economical Plant Within the Reach of Many Small Communities Now in Need of Such Improvements.

A new municipal water reservoir has just been completed at Post City, Texas, and another successful installation of concrete construction work has been scored for the material. The Double U Company, of Post City, did the work. They engineered and planned the construction of the reservoir and successfully carried it to completion. The bottom of the reservoir is 235' above the established grade of the village, which is located just under the Cap Rock, and the location is about two miles west of the village. Water is supplied from wells located on the plains about three-quarters of a mile farther west than the reservoir. These wells range from 90' to 120' in depth. The pumping is done by the use of windmills, and when the water reaches the ground level at the wells, it falls by gravity into the reservoir. In time these windmills are to be supplanted by gas engines with pumping outfits, and the wells will then be deepened to increase the flow.

The reservoir proper is 252' long, 16' feet wide at the bottom, and flaring to 22' at the top of the parapet. The walls are built of dry rubblestone, which was quarried within 300' of the reservoir, and laid in rich cement mortar. This stone is of a reddish hue, very similar to that which is used to a considerable extent in buildings in and about Fort Worth, Texas.

The foundation of the reservoir is 8' below the grade, and is of mass concrete 5" thick, laid upon hard clay. The footings on which the foundation

and side walls rest are 2' 4" wide and 6" thick. The flaring walls are 12" thick and are buttressed with dry rubble all around. The reservoir is 15' deep.

The water that enters the reservoir passes through a 4" intake pipe. The intake box is 4' wide, also made of rubblestone walls with concrete foundations and footings, and is 4' deep. The intake pipe is 3' below the grade and 22' long from the gate in the intake box to the inlet in the reservoir. The intake pipe is covered with a casing of 6" sewer pipe through the reservoir wall.

At the intake box a 4" waste pipe is provided to carry off the water when the reservoir is full. It is operated very simply by the use of a T fitting with two valve gates placed so as to shut off the waste and open the path to the inlet, or to open the waste and close the inlet gate, and these control the supply.

The service outlet pipe rests on the foundation of the reservoir and is covered with a strainer. It is 8" in diameter and 22' 8" from the center of the strainer to the gate in the service box. This pipe is covered with a 10" sewer tile casing through the reservoir wall.

The outlet box is 7' 6" wide and 9' deep. It has a 3" concrete foundation. The water mains for carrying the water to the village are terra cotta, 4" and 2" in diameter. The intention is to put in an 8" cast-iron pipe later on.

For finish, the reservoir is covered inside with a cement plaster made up of one-half barrel of Portland cement and one barrel of high calcium hydrated lime to two barrels of coarse, sharp sand, making a masonry mortar of very high waterproof quality. This plaster is applied about one inch thick and covers both the walls and the floor of the reservoir.

## ROCK PRODUCTS

The lime used was the Snow Drift hydrate, which is manufactured by the Dittlinger Lime Company, of New Braunfels, Texas. Sunflower Portland cement and local aggregates completed the concrete.

The reservoir is roofed over with a light steel frame carrying a prepared felt roofing material, and provided with two revolving ventilators.

This is an inexpensive water system and a good one for the size of the town. While the exact total cost figures are not available for the moment, inquiry will develop that such a plant is easily within the reach of a very large number of villages and rural communities that are sadly in need of such improvement. Pure water supply is the most important factor for maintaining health, and nearly all of our rural communities lack an adequate supply of good water for man and beast, for gardening purposes, and—by no means the least of these—for cleanliness. Post City is merely an industrial village of no more than one hundred inhabitants, in Texas, where water supply is a greater problem than in most other sections. It is a good model and suggests the possible location of a great many similar water supply plants that are badly needed. The engineering department of ROCK PRODUCTS will be glad to assist with practical suggestions, as in this case, the preparation of water supply plants of any capacity.

#### First Skyscraper in Dallas.

The Praetorian Building is the first skyscraper in Texas, and the first building designed for Dallas on the plan of the skeleton steel frame with masonry covering. It is built strictly along the line of the modern office building and contains all that this implies. In no building has greater attention been paid to the comfort and convenience of the tenants. One of the great and vital questions of an office building is plenty of light and ventilation. Both of these necessities have been amply provided for in this building. Without making it appear as a temple for beauty purposes, instead of commercial purposes, for which it is intended, decorations have been used that are pleasing to the eye as well as substantial.

The building has a frontage of 49' 3" on Main Street and 100' on Stone Street. It is fifteen stories high, with an observatory on the roof. The exterior has a 5½-foot base of polished Llano gray granite. Resting on this and extending to the third floor is glazed terra cotta columns, the shade of the material being made specially to match the blue gray porcelain bricks which are used for exterior work. Gray terra cotta is used around all window openings. The same grade of brick was used on all sides of the building, thus giving it the same appearance from any viewpoint.

The foundations are of concrete and all the steel work is embedded in concrete. The floor spans are of reinforced concrete. The partition walls are concrete plastered on expanded metal.

The corridors and wainscoting are all trimmed with marble from the famous Creole quarries in Georgia and was furnished by the George B. Sickles Company at Tate.

The entire building is plastered with Chief brand hard wall plaster furnished by the Roman Nose Gypsum Company, of Bickford, Okla.

There is installed in the building a complete system for cleaning, by which all offices and corridors may be cleaned by the vacuum air process. There is no need of brooms or dusting brushes, vacuum cleaning will do the work on the floors, walls, furniture and decorations.

For use in case of fire in any office, there will be installed fire service pipe connected with the large tanks on the roof. There is one line of hose on each floor, and if necessary it can be used to combat any external fires.

The water for entire building will be provided from a five-inch artesian well.

The mechanical equipment will be up-to-date in every particular, all necessary parts being installed in duplicate.

The architects for the building were C. N. Bulger & Son, of Dallas, and the Hughes-O'Rourke Construction Company, of Dallas, were the general contractors. The plumbing and heating was installed by Sheehan & Company, of Dallas.

Smith & Wilson, Bristol, Tenn., contractors, have recently completed a handsome concrete hotel on the National Soldiers' Home Reservation, near Johnson City, Tenn.

The firm of Pittman & Hertz, concrete block manufacturers, Du Quoin, Ill., have made arrangements to have their headquarters in the building occupied by the Du Quoin Utility Company this winter instead of at the old block factory on North Chestnut Street. This move has been made in order that they may have plenty of water handy and will also have plenty of room.

#### THE SQUARE DEAL.

#### When in Doubt Why Not Invite an Open and Honest Comparative Test?

It is about time that concrete building materials should be accorded a square deal by the building authorities of cities and towns and by local boards of fire underwriters as well as the national board of fire underwriters. Mark the words, "square deal."

Because the makers of concrete building materials ask for no more, neither they nor any other class of producers of materials are entitled to any more consideration, and upon the same dead level of every other material, they are none the less entitled to a square deal.

In a recent case, there were two bidders upon a division wall for a warehouse, one specifying a 12" brick and mortar wall and the other specifying a 12" hollow block wall, the average specimens of both materials being submitted with the bid. The man producing concrete goods was slightly the lower of the two and as such his bid was accepted. The local

sustained a load of more than 900 pounds to the square inch, while three of them failed at 600 pounds to the square inch, and one barely sustained 300 pounds.

#### Concrete Block Stood the Test.

The two materials were given a fire test in a potter's enameled oven, where the known temperature of 2,400° Fahrenheit is attained. The concrete block, which was made of a composition of limestone screenings, sand and Portland cement, after being subjected to such a heat for about fifteen minutes, was found to be uninjured, insofar as external physical observation and examination could develop. Two samples of the submitted brick broke into pieces at a much lower temperature before the heat of the oven could be raised. Naturally, in the face of such a demonstration, the specification was acceptable to both the underwriters and the building authorities of the town, the former consenting to the specification because they realized that the authorities would pass the specification over them upon the merits of the comparative tests.

Now this plainly shows that the building authorities are influenced unduly by the underwriters and that the underwriters are unjustly opposed to concrete materials. The underwriters, to accept the specification of a brick that has never been tested and is incapable of standing any reasonable structural test, in preference to some other material for which greater merit is claimed, is clearly unfair.

If they are disposed to give a square deal or desire to maintain the respect of the public, the least that they could do in a case of this kind is to offer to accept the result of a perfectly, fairly conducted comparative test of the two materials. This would not be establishing any dangerous precedent and would secure the choice of the better material in such a case of combination. It would also maintain the dignity and public respect of both the board of underwriters and the building authorities.

#### Contracts for Concrete Piles.

The Raymond Concrete Pile Company, of New York and Chicago, was recently awarded the contract for placing Raymond concrete piles in the foundations of a compressor house that is being erected at the Erie Basin, Brooklyn, for the John N. Robins Company, William T. Donnelly, engineer; C. F. Bond Company, general contractors. Another contract awarded to the Raymond company calls for the placing of Raymond concrete piles in the foundations of public school No. 17, which will occupy a site extending through from West Forty-sixth to West Forty-seventh Streets, between Ninth and Tenth Avenues, New York. C. B. J. Snyder, architect, Board of Education; Clarke & Stowe, general contractors.

#### Immense Concrete Viaduct Finished.

The Richmond and Chesapeake Bay railroad recently constructed a concrete viaduct three thousand feet in length and varying in height from eighteen to seventy feet, into Richmond, Va.

The foundation was laid of stiff clay and gravel and footings built to bear a weight of three tons a square foot to provide for all possible stresses, including proposed future double tracking. The concrete was made of one part Portland cement, two parts granite dust and four parts crushed granite, to pass through a three-quarter-inch ring. A steel trussed bar was used throughout for the reinforcing. The spans vary in length from eighteen to seventy feet.

#### Manufacture Concrete Blocks.

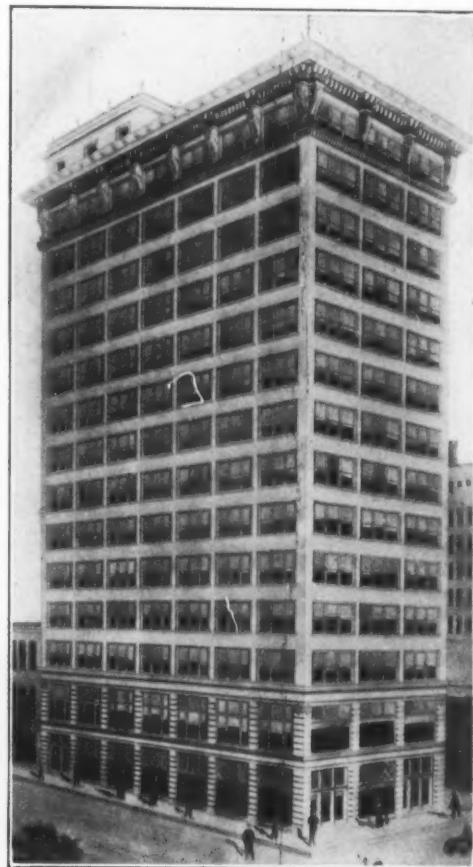
OCONTO, WIS., April 8.—The R. Koch Cement Company's new concrete works plant is now in operation at 417 Madison Street. The plant has three machines and will have a capacity, in a short time, of 350 blocks a day. Twenty-six different patterns will be made in a number of different colors.

#### Concrete Breakwater.

A novel breakwater at Algoma, Wis., has recently been built of huge hollow blocks of reinforced concrete 24' long, 15' wide and 12½' high, each weighing 120 tons. These are launched like a vessel, towed twelve miles, sunk upon piles 11½' below the surface, filled with stone and give a 4' cap of solid concrete.

#### Organize New Company.

PORLAND, IND., April 3.—Mayor C. H. Ayes, Oscar S. Whiteman and Nathan McCoy, of this city, are the incorporators of a company just organized in this city for the manufacture of an indestructible metal above named men are named as directors for the first year.



THE PRAETORIAN BUILDING RECENTLY COMPLETED AT DALLAS, TEXAS.

building authorities, before passing the specifications, submitted the matter to the underwriters' committee, or several of the underwriters. Without any consideration of the matter at all the insurance men ruled adversely to the concrete material without any investigation.

#### Both Materials Tested.

It happened that the builder who had the specimens of material preferred the concrete blocks on account of their smooth, finished surfaces, which would give his division wall a fine appearance without the cost of plastering. This opposed the rough looking sample of mud brick, which would require a plaster finish to make it in any way presentable.

He took the matter back to the fire underwriters and insisted upon a thorough inspection and examination, the result of which is given below:

Five of the hollow concrete blocks, measuring 8x12x24" were voids, amounting to about one-third of the total cubical contents; when tested for crushing strength none of them showed check or crack at a maximum pressure of 1,400 pounds to the square inch, which was the limit of capacity of the apparatus. Five samples of brick were tested for crushing strength, these being embedded in mortar on account of the unevenness of their surfaces and none of them

**The Southland Hotel at Dallas.**

The Southland Hotel building at Dallas, Texas, is the only structure of its kind in the state. It was the first steel and concrete constructed building in Dallas and was completed on September 15, 1907, when it was opened to the public. The building is on Commerce, Murphy and Main Streets. It is 75'x200' and eight stories high. The architects were Parkinson & Bergenstrom, of Los Angeles, Cal. The general contractors were the Stevenson-Kenyon Contracting Company, of Dallas, Tex.

The foundations rest on 4'x6' concrete piers, which are sunk to bedrock, twenty-five feet below grade.

The building is constructed of that type of building known as balloon construction. The floors are all of reinforced concrete. The floor slabs have 16" centers with twisted steel to reinforce the concrete. They are designed to carry a load of 400 pounds to the square foot. The beams and girders are of steel.

The exteriors of the first two stories are of terra cotta with plate glass windows between the columns. Above the second floor St. Louis buff brick is used. Four thousand barrels of Lone Star Portland cement, manufactured by the Texas Portland Cement Company, of Dallas, was used in the concrete work. The aggregate for the concrete was composed of sand and gravel with the cement.

The interior of the building is plastered with hard wall plaster furnished to the contractors by the Acme Cement Plaster Company. There is consid-

Ill., has been organized to manufacture brick of superior quality upon a very large scale. Improved machinery for the manufacture of this type of brick is another important factor to be considered.

After several years of experimentation with the local materials the company has been organized as stated above. Following are the officers of the company: President, N. J. Carey; vice-president, C. A. Carey; secretary-treasurer, J. F. Blakeslee; general sales manager, A. E. Pruess.

The brick which will be put on the market by this company will be made of Utica hydraulic cement and an aggregate of sand, known as the Ottawa, and used as a standard for all high-grade mixtures.

One of the plants of the Utica Hydraulic Cement Company, known as the Blackball mill, has been purchased, and additional machinery will soon be installed to complete the equipment necessary to manufacture brick. The Blackball mill has a capacity of 1,800 barrels of cement per day, and has not been operated for the past two years. The machinery is in excellent condition, as are all the buildings which were erected after a disastrous fire seven years ago.

The quarry property of the company contains two ledges of cement rock which lies in the adjacent hills. The entries into the tunnels will be made above the top of the kilns, so that the loaded cars of rock will be dropped into the top of the kilns. After calcining, the rock is conveyed to the crusher house, where it passes through the various processes for making cement specially adapted to the manufacture of brick.



THE SOUTHLAND HOTEL, DALLAS, TEX. PHOTO TAKEN MARCH 15.

by a 300-KW alternating current generator, which erable ornamental work. On the lintels, the ornaments are cast rosettes.

The lobby is trimmed with green clay products, and the floors are of mosaic work. The panels of the ceilings are decorated with mural paintings which cost \$2,800, and were executed on canvas by a Los Angeles artist. The barber shop and toilet rooms are finished with Georgia marble, Kennesaw and Creole being used mostly.

Considerable difficulty was encountered by the contractors when laying the floors in the basement. This was overcome, however, by draining into cisterns and using the water. The foundations for the floor were covered with five sheets of tar paper and this was covered with concrete tamped with mosaics.

**New Type of Brick Developed.**

With the development of cement products, the sand mortar brick has come to the fore in several ways with very gratifying results in many cases. One of the greatest drawbacks to this particular product has been the comparatively high cost of production, which made a high selling price and put the product out of the competitive market with other building brick.

With the two basic materials in close proximity and a large market near at hand in which to dispose of the product, the Universal Brick Company, of Utica,



THE SOUTHLAND HOTEL, DALLAS, TEXAS.

**Arrange Meeting During Cement Show.**

At a recent meeting of the executive committee of the Illinois Society of Municipal Contractors it was decided to hold their next annual convention in the city of Chicago during the Third Annual Cement Show. This step was taken with the idea in view of permitting the members of the association who will attend the convention to also visit the cement show.

The Chicago cement show is rapidly making its importance felt throughout the country, and this is an indication of the attraction it has become for organizations of engineers, contractors and technical bodies.

It is reported that several other organizations also contemplate holding their next annual meeting in Chicago simultaneously with the cement show.

Extensive preparations for the event are already in progress, which promises an exhibition even more remarkable than the successful show held last February.

Wayne County Concrete Company, Fairfield, Ill.; to deal in concrete construction work; capital, \$5,000; incorporators, W. F. Moore, J. H. Morlan, W. J. Durnell.

**Concrete Blocks in Fine Work.**

"One of the beautiful new block residences in the West is that built by F. Reimers, of the firm of Reimers & Koffman Company, concrete workers at Lincoln, Neb.," said A. Baumgartner, of the Kansas City Portland Cement Company. "Its interior arrangement and trim is perfect. The exterior, as you will see from the picture, is very artistic. It is the kind that attracts people to the use of cement, and Mr. Reimers deserves to be congratulated on his new home."



F. REIMER'S RESIDENCE, LINCOLN, NEB.

**Linz Brothers Building at Dallas.**

DALLAS, TEX., April 10.—The only reinforced concrete beam building in this city is that recently completed by Linz Brothers, the jewelers. Though this building is not a large one, it is a splendid type of this class of concrete construction. It is five stories high and is 25'x95'. In this building the American system of reinforcing was used. The beams are 7' long and the floor was designed for 3½", though 4" of concrete was laid. It was designed to carry a live load of 150 pounds per square foot. The curtain walls are of brick.

The architects for the building were Langard & Witcher, whose offices are in the Wilson Building, Dallas. The Stevenson-Kenyon Contracting Company were the general contractors.

On account of the hot and dry climate in this section concrete does not give the best results unless very wet. In this case, in order to get perfect crystallization they had a man spray the concrete in order to keep it thoroughly wet until the initial set was obtained. Thus the concrete is now in splendid condition. The architects and owners, when interviewed by a Rock Products representative, both expressed great satisfaction in the building.

**Concrete Block Plant Doubles Capacity.**

PHOENIX, ARIZ., April 10.—The American Concrete Block Company, of which A. L. Ell is manager, has in six years doubled the capacity of its plant on South First Street. A large consignment of new machinery has been ordered, improvements have been made at the plant and other arrangements made to handle the rapidly growing business.

**Appreciation.**

Peter Gillespie, president of the Canadian Cement and Concrete Association, writes us as follows: "We desire to acknowledge with many thanks the receipt of the March number of ROCK PRODUCTS. We read with much interest your write-up of our recent convention and exhibition and are very much pleased with its fairness and excellence."

**Stucco Exterior of White Portland Cement.**

We are showing an illustration of the residence of Peter J. Collins, at Flatbush, Long Island, N. Y. This house was finished exteriorly with stucco work



RESIDENCE OF PETER J. COLLINS, FLATBUSH, L. I.

made of white Portland cement manufactured by the Sandusky Portland Cement Company, of Sandusky, Ohio. The stucco also contained Medusa waterproof compound. Mr. Collins was formerly superintendent of building, borough of Brooklyn, N. Y.

**New Incorporations.**

The Duluth Cement, Brick and Stone Company, Duluth, Minn., has been incorporated, with a capital stock of \$100,000, by L. Harris, William Harrison and J. J. Robinson.

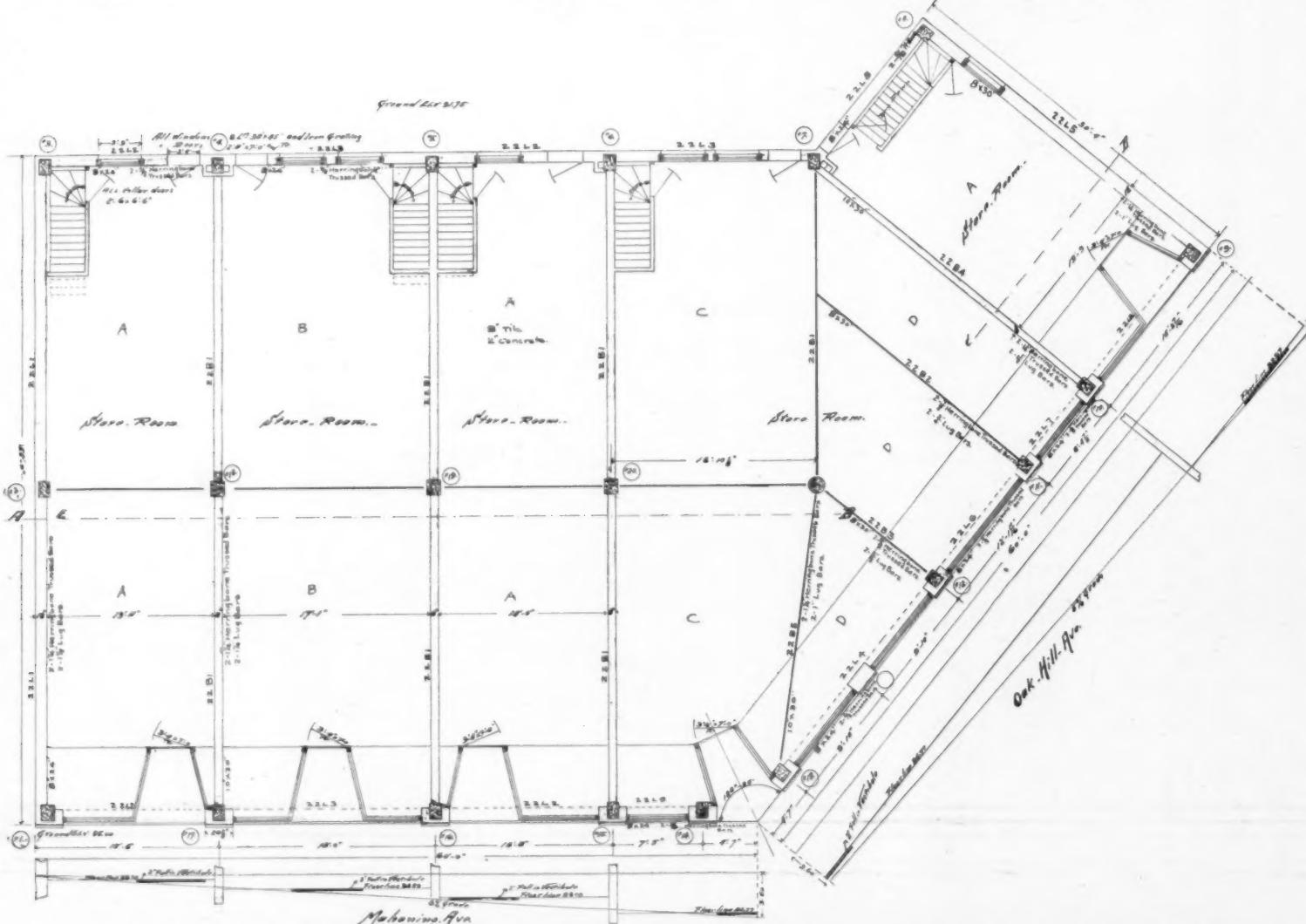
**THE CONNELL BUILDING.****Best Type of Concrete Structure Now in Course of Erection at Youngstown, Ohio.**

On this page we are illustrating the elevation and first floor plan of the business property now under construction for the Thomas Connell estate, at Youngstown, O. In its entire construction it comes about as near to being completely a concrete building as any that has ever been erected, and while similar to several other buildings designed and constructed by the same engineers, it has a number of attractive points, both in its structural features and in its advantages as a profit-paying investment.

The design is by Charles Connell, engineer and contractor of Youngstown, who has to his credit a number of substantial buildings, some of them the best in his native city. Last year he constructed the Century Building, a four-story reinforced concrete structure, using concrete structural tile for all the partitions and for the floor span work. Also the Macaroni Manufacturing Company's building, a short distance from the first.

Now, referring to the ground plan, the peculiar shape of the lots will be observed, the left line of which rests on the water front of Mahoning River, and the elevated viaduct which spans the river and the Pennsylvania Railroad terminal, joins at Oak Hill Avenue, the course of which is shown in the drawing along the line indicated by the two drawings.

This building is being constructed by the use of solid concrete foundations and cellar walls resting upon hardpan, with a reinforced concrete frame, using the General Fireproofing Company's lug bars and herringbone truss bars. All of the curtain walls are to be built of 8"x8"x16" single cell concrete tile. The exterior of the elevations facing Mahoning Avenue and Oak Hill Avenue will be faced and trimmed with Canton red brick.



DETAIL DRAWING OF FIRST FLOOR PLAN OF CON NELL BUILDING. COMBINATION OF REINFORCED CONCRETE AND CONCRETE TILE.



DETAIL ELEVATION AND FRONT OF CONNELL BUILDING. CONCRETE TILE WALLS FACED AND TRIMMED WITH FACE BRICK.

**Details of Floor Plans.**

The three floors will be constructed of reinforced concrete ribs in cross section 4" x 10", and the length of the spans, as indicated by the figures on the drawing. Between these ribs, which are to be spaced 16" on centers, will be laid four-cell concrete tile, 8" x 12" x 12", and the concrete reinforced ribs will be cast monolithic, with a 2" concrete floor covering, finished to trowel. All of the partitions in the building will be of 4" x 12" x 12" concrete tile and the rough construction, light steel truss work, carrying felt composition and gravel roofing.

The entire space of this building has been laid off in a very advantageous manner to meet the requirements of the location. Fronting about 59' on Mahoning Avenue there are three retail store rooms, and fronting the same distance on Oak Hill Avenue there are three store rooms, leaving the corner store room with an obtuse angle for the main entrance, with the best show window provisions in the entire city, facing on both of the thoroughfares; in this way making each one of the stores an attractive renting proposition.

The second floor is sub-divided so as to make four commodious offices of two rooms each, and three 6-room residence flats, all containing every metropolitan convenience, and handsomely finished.

The third floor is arranged for public hall and lodge rooms, so that every cubic foot of space in the building is directly provided for, earning a profit upon the investment.

Mr. Connell is to be congratulated on this design as an achievement of his experience in construction. He is one of the foremost engineer-contractors in the eastern part of Ohio. He is one of those practical reinforced concrete advocates who solidly contribute to the advancement of the industry. Mr. Connell was one of the first to recognize the pronounced advantages and economies to be secured by using concrete structural tile, and since there was an available supply of this material in the Youngstown market, he has specified no other in all of his building work. There is no better evidence of this expert's endorsement of the material than the fact that he uses 30,000 of this kind of tile in the construction of his own building. He has studied reinforced concrete from the standpoint of the practical engineer and contractor and expects to develop the advantages contained in the material.

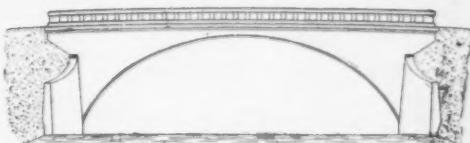
Fireproof building has long been his hobby and in this design he feels that he has reached something like the acme of perfection from the fact that no part of the building is vulnerable to fire. Only the contents can ever become an actual fire risk. These

plans have not only been passed by the building inspector and the fire marshal, but commended by both of them as the most desirable type of building in all of its specifications for the most congested localities.

Mr. Connell is looked upon as a leader in his line because he possesses that desirable faculty of always making good with his structural undertakings. In this he continues the reputation founded by his father, who, in the generation that is gone, was a contractor of reputation in the same community.

**Reinforced Concrete Culvert.**

The accompanying illustration shows the reinforced concrete culvert on the Monrovia Road near the Conlon School, Atchison, Kan. It is a 40-foot arch and



CONCRETE ARCH ON MONROVIA ROAD NEAR ATCHISON, KAN.

cost \$1,800. In the main part it is a shell, excepting that the end or foot walls are 3 feet thick. This thickness gradually decreases to 8 inches over the crown of the arch. The culvert has a concrete floor and around the arch and under the floor, every 12 inches, are steel rods, tied together longitudinally with flat steel and wire. It has a roadway width of 16 feet and concrete parapet walls and railings. There are also wing walls, as shown in the illustration.

**Fine Display of Concrete Products.**

We are showing a recent display made by the Valley Creek Concrete Works, of Selma, Ala. This display was made at a fair. The concrete blocks for the urns, flower pots and porch columns were cast in Simpson concrete moulds, manufactured by the Simpson Cement Mould Company, of Columbus, Ohio.

Harry Washburn, of Bath, Me., will erect a concrete garage on Commercial Street, at the corner of Broad. It will be 40x74 feet, two stories in height. All the floors will be of reinforced concrete and so will the roof, and the structure will be fireproof in every way.

The contract for the building has been awarded to W. H. Smith, of Boston, the firm which is building the vault at the Bath Iron Works. The plans and specifications were prepared by Architect H. F. Frederic, of this city. Work will be begun on the new building at once and rushed to completion. Mr. Smith expects to have it ready for the owner in about two months.



DISPLAY OF THE VALLEY CREEK CONCRETE WORKS, SELMA, ALA. ALL BLOCKS SHOWN EXCEPT MONUMENTS MADE ON SIMPSON MOULDS.

## SECURITY AT LAST.

New Concrete Building Material Gives to Mankind the Supreme Blessing of Homes Safe from Fire.

This is the age of progress. As far as the burden of conversation goes, improvement in the construction of buildings has far outstripped progress in other lines. One instantly calls to mind the steel-framed skyscrapers and the later concrete construction, both of these fireproofed according to one or another of the modern systems.

But practically all of this progress is confined to very large commercial and public structures, to sacred edifices and to operative buildings of the corporations conducting common utilities. In all of these branches the improvements that have been introduced are truly wonderful and far-reaching in effect.

However, for all classes of small structures, until very recently there has been little or no change, either of materials or methods, in thousands of years. The little homes for the millions of this country's population have never been any other than wood, brick and stone in suitable combination. This field contains no reward or compensation for either the architect or the engineer. Consequently the great technical and creative brains have not been consistently employed upon the problems that lie in this direction.

The log cabin is not very far in the past, and an overwhelming proportion of all the homes of the people of the United States are still built entirely of wood, or with wood predominating in the interior construction at least. With the single exceptions of the general introduction of sanitary plumbing and better ventilation, we, as a nation, really build as crudely today as our great-grandfathers did in the eighteenth century. This, in spite of the great progress in evidence by those types of construction already



ITALIAN STYLE OF CEMENT PLASTER EXTERIOR TREATMENT.

family, it comes out of the earth itself. The principle is merely to use building materials that are not of themselves inflammable. Not part of the materials, but all of them. Everybody knows by observation that there can be no fire without some substance or material being burned—consumed. By using only materials that cannot burn in the construction of all future homes, then will the terrible fire risk be eliminated. So the principle is clear enough.



FOUR-ROOM TILE COTTAGES UNDER CONSTRUCTION. THE CONTRACT PRICE OF THESE COTTAGES IS \$950 EACH. THEY ARE COMPLETELY FIREPROOF AND VERY NEAT.

mentioned, and besides the application of the same principles in building the magnificent homes of the very rich.

### Unabated Fire Risks Upon Homes.

The terrible fire risk to life and property has not been diminished for the masses of the people, with all the progress we have made in materials and methods of construction, until the present moment.

Contemplate the devastation of Fort Worth and Dallas, Texas, only a few days ago. Then a little later the scene of destruction is shifted to Rochester, N. Y. Millions of dollars in property, mostly homes—wooden constructed homes, necessarily, because else they would not be inflammable. Thousands of people homeless in these three cities—the fruits of days, months and years of human toil and economy, wiped out in an hour! The awful spectacle is still incomplete, for want and hardship and suffering are measured out to little children to the number of thousands, their opportunities in many cases shortened for life by the irreparable losses of their parents. Worse still, human lives were lost in the flames, and more human lives are passing now by reason of the consequences of injury and exposure.

These are dreadful tragedies. The facts related here as transpiring within the first half of the present month of April, 1909, actually constitute less than one-fourth of the total loss of life and property in this country in the same space of time. Think of it!

Statistics prove that such records are not unusual. Year after year the same kind of incidents are quoted over and over again, with insignificant variation, but always with appalling totals of millions in property destroyed and thousands of human lives sacrificed.

### Advantages of Portland Cement Concrete.

There is at last a remedy. It is simple, cheap, and easy to apply, both in principle and in practice. Like every other immeasurable blessing to the human

Concrete structural tile is used for the walls, partitions, floors and roof with equal facility. It can be veneered and trimmed without and within according to the taste, the choice, and measured by the purse of the builder. A small home of concrete tile can be built quite as cheaply as a wooden one. A large house can be made fireproof and money saved in the operation. All of the intricate technicalities of modern requirements have been provided for.

### World Wide Influence and Significance.

In all the ages since man first began to wear clothing and to erect a shelter for the protection of his progeny, there can be found no improvement that compares with the introduction of concrete structural tile. Every former habitat of man has been exposed to the danger of destruction by fire, with the attendant risk of human life—the lives of those most dear in every case. The ever-present fear and dread that no doting parent could ever put away can now be avoided—eliminated. In this the whole state of civilization is advanced, for every individual, high or lowly, rich or poor, can participate in a new fundamental blessing that is plainly tangible.

In naming the inventor, A. A. Pauly, of Youngstown, O., a year ago, we did so with full knowledge that we were then crowning him as a member of the brilliant circle of world benefactors.

Now the three greatest inventions belong to America—greatest because they touch closest to the individual comfort and happiness of all the people. Edison, who turned darkness into light with his magical electric light; Whitney, who made the raiment of kings to become the apparel of ordinary citizens with his cotton-gin; and now comes Pauly, who makes possible the building of safe, sanitary, and, consequently, happy and healthful homes with his concrete tile.

### White Cement and Sand.

The recent exhibitions of the concrete products brought out many very beautiful pieces of ornamental concrete work. This feature of the industry will bring it to the fore quicker than any other. The use of concrete for exterior surfaces is developing very rapidly. We now see delicate tints and colors worked out in concrete by a combination of colors and pigments. The use of white cement has come to the aid of the concrete users and to get the best results white sand is used. Ottawa white sand which is 99.87 per cent pure silica is used in large quantities all over this country and in Canada. Everywhere it is found to be the best for this purpose. Ottawa sand is the standard adopted by the American Society of Testing Materials and for all chemical work and laboratory tests, it is used in large quantities.

The O. C. Green Concrete Machinery Company, Oklahoma City, Okla., has been incorporated by O. C. Green, T. F. Hunt and S. J. Carpenter. The capital stock is \$25,000.

The Crossett & Lloyd Concrete Company, Binghamton, N. Y., has been incorporated by Frank L. Crossett, Walter O. Lloyd and Eugene W. Prout, with a capital of \$20,000.



PLASTER-FINISHED EXTERIOR IN GERMANY.



TWO EXAMPLES OF CEMENT PLASTER EXTERIOR TREATMENT BY P. P. COMOLI, AT SIOUX CITY, IOWA.

### Cement Plaster Exteriors.

(Continued from Page 3.)

dence enough to recommend anything of the sort. We can learn a great deal from the Germans and French about the mixture and manipulation of the materials, and from the Italians we can get all that we need for centuries about design. Even the most eminent chemists seem to be unable to give us information about plastic materials that has much value in practice. Even in the simple matter of bricklaying mortar our best experts fail to give reliable formulae, the kind that works out every time in practice. When it comes to using large quantities of exterior plaster like foreigners employ, how much more would they fall down. These kind of reports reach the Rock PRODUCTS shop from every part of the country almost daily, and from our point of view it looks as if the whole subject of plastic materials, beginning with the basic scientific information and on to its practical application, is in a most deplorable condition. If anyone possesses any knowledge upon this subject he must be keeping it under lock and key, and is clearly not himself profiting thereby. This is not throwing stones at anybody, but it is truthfully stating one condition of the building trades as it exists in the United States this day.

One great need of the building trade is an awakening to the vast possibilities that lie in the development of exterior treatment by the use of cement plasters. Possibly some other ingredient in connection with Portland cement may be necessary to get the desired results. At any rate it is now high time to begin this study upon definite lines.

Many institutions of learning in these times are devoting new departments to the study of practical problems of this nature, and here is a field where more real good can be quickly accomplished than in

many others. Practical workmen could easily be taught to use the material intelligently by means of demonstrating class work, and plenty of men would be glad to take up the study, because it will make a business or trade yielding good pay.

We are indebted to P. P. Comoli, of Sioux City,



CEMENT PLASTER EXTERIOR, VIENNA.



APARTMENT HOUSE, PARIS—CEMENT PLASTER EXTERIOR.

Iowa, for a number of illustrations of average concrete work he found in Europe during a recent trip abroad. He is a practical workman, having learned the plasterers' craft in Italy, and some of the work he has done in this country has an excellence that commends it to every observer. He is not unknown to our readers, having been prominent for several years in the promotion of the industry in this country.

### Third Annual Cement Show.

The dates for the Third Annual Cement Show in Chicago have just been announced. The exhibition will again be held in the Coliseum, on February 17-23, 1910. These dates were selected after very careful consideration and in accordance with the expressed wishes of a very large majority of the exhibitors at the two previous exhibitions. The show this year proved conclusively that the latter part of February is the most satisfactory time for holding a cement show. The exhibitors at Chicago this year were all highly pleased with the date and nearly all expressed their preference in favor of holding the next show on a corresponding date.

Elaborate arrangements are already under way to make the next exhibition even better than the last, and it is stated that no money or effort will be spared in perfecting the arrangements.

### To Build Concrete Pipe.

Arthur S. Brent has received a contract to install 12,000' of 8" concrete pipe for El Mirador Park Water Company at Lindsay, Cal. The concrete pipe will replace one of wood and will cost about \$2,800.

Mr. Brent will construct also 10,000' of concrete pipe at Porterville, Cal., for the Miami Land Company at a cost of \$3,000.

### Bridge of Concrete.

The Jamesville Construction Company, State Mutual Building, has been awarded the contract by the city of Providence, R. I., for a concrete bridge with one arch, on Branch Avenue, in that city. It will be 75' wide and have a 39' span. It will have a walk on each side and work will be begun in about two weeks. The contract is for about \$7,000. The Eastern Bridge and Structural Company, of Worcester, Mass., was awarded the steel girder contract for the bridge.

### A Growing Industry.

F. N. Kantner, who three years ago established a concrete building factory just south of Somerset, Pa., and whose work has met with great approval, has from time to time added improvements, and now has an up-to-date plant. Two years ago Mr. Kantner put upon the market a concrete paving block, ranging in width from 18" to 48". These blocks have been extensively used at Somerset and elsewhere, and have given universal satisfaction.

### Another Indiana Concern.

A number of leading business men have organized the Mt. Vernon Concrete Block Manufacturing Company, Mt. Vernon, Ind. There are ten in the company and each has subscribed for \$1,000 worth of stock. The company will be incorporated for \$10,000. The new concern will manufacture concrete blocks, lay sidewalks, concrete gutters, etc. The size of the plant will be 140'x140', and will be located in the western part of the city. Capt. John H. Moeller is at the head of the enterprise.



DEPARTMENT STORE IN VIENNA—CEMENT PLASTER EXTERIOR.

## Northwestern Association Adopts Design.

Martin T. Roche, president of the Northwestern Cement Products Association, sends us the design for the Northwestern Cement Products Association. He says: "We intend to lease them to the members and not make outright sale, so that we will be in position to recall them at any time that a man, who is now a member, acts contrary to the best interests of the association. We are endeavoring to have every member who is actually engaged in the concrete business to use it on their cards, letter and billheads, and other printed matter. We believe that in time it will give the members of the Northwestern Cement Products Association a particular standing in the cement business. We intend to have the seal copyrighted, so as to prevent anyone else from reproducing it without the consent of the association."

## Artistic Concrete Porch Columns.

The highly decorative feature of concrete porch column blocks and trimmings are shown in the residence of Harry Thomas, Circleville, Ohio. These were cast by C. F. Sutz, of that city, and Simpson molds were used.

A splendid example of concrete porch columns for artistic decoration is shown in the residence of Mr. Misler, of Bellefontaine, Ohio. The blocks and columns were made by the Cement Block and Construction Company with Simpson molds.

## A Concrete Grindstone.

A grindstone made from one-half best Portland cement and one-half silica sand may be used in grinding glass to take the place of the wheel dresser. The materials must be thoroughly mixed and evenly tamped. The advantage of this stone is that when properly made there will be no hard and soft spots, and it will grind glass without scratching. The cost is about 10 per cent of that of the common grindstone. The Onward Manufacturing Company, of Menasha, Wis., to whom we are indebted for this information, has been using concrete grindstones successfully for a year.

## Diagnosis of the Block Industry.

BY U. S. DRAKE.

The concrete block fills the place made by the universal desire of builders to adopt a material that will not burn and at the same time contain the basic principles of architectural design with sufficient flexibility to make it generally useful.

In the present article we will treat of single block walls. By single block walls we mean all walls built of blocks, the width of which constitutes the thickness of the wall. Single core blocks were, perhaps, the first originated. Specimens of these were exhibited at the Centennial in Philadelphia, in 1876. The double core block has been in use since 1888 and many designs, varying slightly, are now in the market.

It should be remembered that as concrete is artificial stone and walls constructed of it will have a stone-like appearance, especially is this true of blocks.

The strength of concrete blocks depends upon the density, and density is secured by grading the materials so as to have as few voids in it as possible. Also by thorough tamping.

As sand, gravel and crushed stone vary greatly in the percentage of voids, it becomes necessary for the block maker to carefully examine the materials to be used in a given job so as to determine the exact pro-



the voids we will have a very dense block. Age will also increase its density by the gradual crystallization of the cement in the mixture of the block.

In a mixture of sand and gravel or crushed stone weighing 125 pounds per cubic foot the voids are about 25 per cent. This makes a fairly good block in a mixture of 1 cement to 4 of the sand and gravel. Fine and coarse sand usually has about 33 per cent of voids and therefore would require 1 cement to 3 of sand.

A better result can be obtained by using 20 per cent of hydrated lime in combination with the cement (measured by weight). Either this method or the use of some good waterproofing compound is to be recommended.

The writer has used lump lime reduced to a paste or putty with success and found it economical. However, in using lime putty care must be taken to leave no particles of unslaked lime to expand within the block and make trouble. Ordinary lime paste contains about 50 per cent water, consequently twice as much of it by weight must be used as of dry hydrated lime. It is also very difficult to mix, and can only be used successfully when mixed by a machine.

Concrete consisting of 1 part cement,  $\frac{1}{2}$  part hydrated lime and 6 parts of sand and gravel, by weight, will make a fairly waterproof block, better than  $1\frac{1}{2}$  cement to 6 of sand and gravel. Such blocks will have sufficient strength for use in the walls of ordinary dwellings.

Blocks are sometimes given a facing of a rich mixture of 1 part cement to 2 parts sand. This also gives the face a smooth appearance. When a face down machine is used it is a simple matter to put in a thin layer of the rich, wet mixture and then fill and tamp in the regular mixture. Or after the cores are placed and the mold partly filled a little of the rich mixture is put in the cross walls, thus giving a waterproof layer in the center of the block. This will require a less quantity of rich mortar than to face them, and these small savings count. The same results are ob-



PORCH OF RESIDENCE OF HARRY THOMAS, CIRCLEVILLE, O., SHOWING CONCRETE COLUMNS.

tained when using a vertical machine by having a piece of thin metal placed in the mold at a little distance from the face plate. This plate is withdrawn when the mold is full and the mass is well tamped so as to unite the face and body of the block. To put the waterproofing in the center of the block in a vertical machine thin wooden blocks are inserted in the cross walls. These are taken out when the mold is filled and the spaces filled with rich mixture and well tamped.

There are in the market several waterproofing compounds which are mixed with the cement in the proportion of 1 to 2 per cent, by weight, to make the blocks waterproof. Care should be taken to secure those compounds that give permanent results.

It has been the experience of the writer that the simplest and most effective way to render an absorbent concrete wall waterproof is to give it a very thin wash of cement suspended in water. Two coats of this wash will be sufficient. If the coating be too thick hair cracks will show. This wash will cause the walls to show lighter in color.

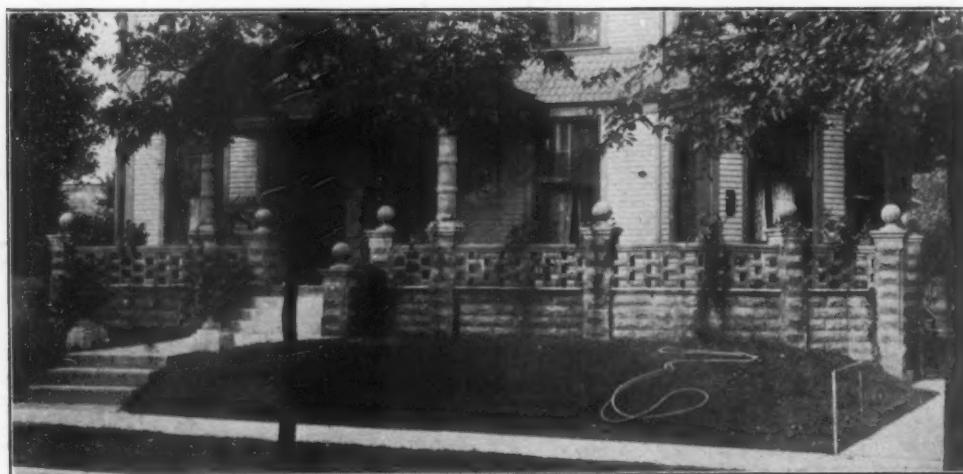
Single block walls are quicker of construction and less expensive than monolithic. They also eliminate the shrinkage cracks that are so often found in the latter.

There are two systems used in the manufacture of concrete blocks:

First—Those tamped from a semi-wet mixture and removed from the molds immediately.

Second—Those in which a wet mixture is used, being either poured or tamped and allowed to remain in the molds until sufficiently set to allow handling.

The size and shape of concrete blocks vary. However, the most popular machine builders have adopted a length of 32 inches, a height of 9 inches and a width of 8, 10 and 12 inches, according to the thick-



RESIDENCE OF MR. MISLER, BELLEFONTAINE, O., SHOWING ARTISTIC CONCRETE PORCH COLUMNS.



COMPLETE ARTIFICIAL STONE COMPANY'S YARD, CHICAGO, ILL.

ness of the wall. The same machine will also allow a length of 24, 16 and 8 inches by using blocks and parting strips of thin metal. A block 32" x 9" x 12" is quite heavy to handle and correspondingly expensive to lay. So that the writer thinks there should be a considerable reduction in length and also in height, as there can be none in width on account of the thickness of the wall. Blocks 16" long and 6" high would be much easier and less costly to handle. Blocks of this size are likely to be of a better grade because of less mass to tamp in the mold than the larger one.

Blocks are made with rock face, tool face, paneled and ornamental design, as required by the architect.

In mixing concrete for blocks a machine should be used. It is not only cheaper but does more thorough work than is possible by hand.

Tamping is usually done by hand, although the pneumatic tampers are used in some factories. They save time and also secure more thorough work than the hand tamping. Fill the molds a little at a time, at least four fillings to a 9-inch block, and tamp each layer thoroughly.

It is safe to assume that a well made block at one month old will have a minimum crushing strength of 1,000 pounds per square inch and at one year old 2,000 pounds. If we assume a factor of safety of 5, a safe load for the above block would be 200 pounds per square inch.

A block 16" x 12" x 9" has 192 square inch surface. Deducting one-third for openings we have 128 square inches of bearing surface, which at 200 pounds per square inch would equal 25,600 pounds as a safe load. Counting the block as weighing 90 pounds, 284 such blocks could be placed on top of each other before the bottom block would have one-fifth of its minimum crushing weight upon it. This would make a wall 21' high, a height much greater than would be required in any ordinary building. Seeing the excessive strength in a block with one-third openings, would not a block with one-half openings be more acceptable to the builder, both from the point of weight and cost?

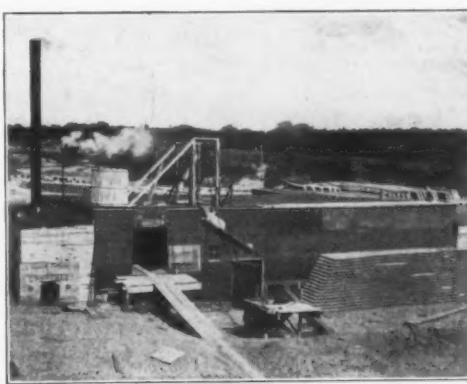
Definite estimates cannot be given here of the cost of concrete blocks, because of local variations in the cost of materials and labor.

The following may serve as a guide. One barrel (380 pounds) of cement and 1,520 pounds of sand and gravel will make 1,900 pounds of concrete, using a 1 to 4 mixture. Counting concrete at 130 pounds per cubic foot, we have 14.6 cubic feet. A block 9"

high and 32" long will make two square feet of wall. The same block 8" thick will contain one and one-third cubic foot and one 12" thick, two cubic feet.

From these figures it will be a simple matter to calculate the cost of a block by ascertaining the price of cement per barrel and the cost of sand and gravel per ton.

The labor cost can also be figured on the basis of seventy-five 8" and fifty 12" blocks per day for three men. We assume that the men have worked for some little time and therefore are accustomed to the work.

SHOEN CEMENT TILE AND BLOCK FACTORY.  
GOLDFIELD, IA.

The above figures are based on blocks with one-third openings. Blocks with 50 per cent openings would require less material, hence a greater number from the given amount of material.

It is also assumed that the mixing and tamping will be done by hand. Machinery driven by power for tamping or pressing the blocks, and a power mixer will reduce these costs in proportion to the efficiency of such machines.

#### Concrete Drain Tile.

Probably there is no more important and interesting feature of the rapidly developing concrete industry than that of the manufacture of concrete drain tile. The scope of business possible to be secured for this class of goods is practically untouched as yet. In this country there are millions of acres of land, today worth less than a dollar an acre, which, if reclaimed by means of proper drainage, that is to say, the use of concrete drain tile, would have a value of \$100 to \$150 an acre.

The development to date of the concrete drain tile business has been one of great promise. Practically every intelligent man who has entered the business has succeeded in making very satisfactory returns both for his investment and his effort.

The three accompanying illustrations give a description without words of the extensive concrete tile plant, owned and operated by H. T. Schoen at Goldfield, Ia. These pictures were all taken about the close of the active business season last year and give a fair idea of the scope of the operations of this plant, which is located in the midst of the fertile plains of the state of Iowa, known as the Granger belt.

Interested parties have attempted an adverse campaign against concrete drain tile, but after giving the same due consideration, it is clearly apparent that there is plenty of room for unlimited activities of both the drain tile made of clay and that made of concrete. There is really no cause for a dispute upon such a topic, as the need for the goods is so much wider and greater than both of the parties to the argument will ever be able to take care of that it is really futile for them to continue such a discussion. The concrete drain tile occupies a position today of its own because it has earned it and it is well worth the money that it costs.

#### Will Investigate Drain Tile.

The Universal Portland Cement Company has for some months past been carrying on an investigation of the cement drain tile question, about which there has been so much discussion of late. In connection with this undertaking the action of Griffin & Todd, cement tile manufacturers at Shabbona, Ill., in turning over their plant to the cement company to be run experimentally by them, is very commendable. The Universal Portland Cement Company has two of its representatives at the plant at Shabbona, and are operating it with the object in view of securing such data as may shed any light upon the cement tile problem.

#### A Busy Concrete Block Concern.

The Complete Artificial Stone Company, 1895 Elston Avenue, Chicago, has been one of the important factors in concrete block construction on the northwest side of the city. John Ross is the manager of the company and he is an experienced contractor. The company has contracts for the erection of residences in many subdivisions in the growing part of the city. Its spacious yard was, at the time the picture was taken, well covered with concrete products which were curing. In the busy season the concern is not so fortunate as to have such a large stock on hand. It does a large business in concrete chimney block construction, as well as porch trimmings.

Edwin Edelman and F. Hirsch, Winslow, Neb., will equip a concrete block factory with the latest and best machinery. Operations have commenced on the erection of a building which they will use for the purpose. They have also secured a site on the Burlington right-of-way on which they will erect sand sheds and in which they will store sand which they will have shipped in from outside points.

William Scharfenburg is planning to operate his concrete block factory most of the winter at Traer, Ia.

Ludwig B. Larsen, David Goodell and J. Larsen have filed articles of incorporation of the Oregon Concrete Block & Machine Company with a capital stock of \$25,000, at Portland, Ore.

The Elyria Concrete Company has been incorporated at Elyria, O., with a capital stock of \$25,000. The incorporators are C. W. Wales, E. C. Griswold, H. W. Ingalls, F. A. Stetson, G. R. Allen.

The Concrete Products Company has been incorporated in New York City, for concrete construction work. The capital stock is \$1,000,000. The incorporators are R. F. Tucker, G. H. Guy, New York; K. L. Martin, Brooklyn; P. A. Tomes, Woodmere, L. I.; M. Watson, East Orange.

#### Wanted.

Good second-hand crusher.

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CONCRETE CREW.SHOEN CEMENT TILE AND BLOCK FACTORY,  
GOLDFIELD, IA.

### Reinforced Concrete Railroad Work.

Paper read before the convention of the National Association of Cement Users.

BY B. H. DAVIS, C. E.

The advantages of reinforced concrete as a building material for railway construction are indeed many as compared with its few disadvantages which may more properly be termed its limitations.

Where it is possible to use reinforced concrete for a part or the whole of a railway structure, it is generally of advantage at least in the long run to make use of this practically indestructible material.

In reinforced concrete there is a combination of the good qualities of two most valuable building materials—steel and concrete—and each of these constituents supplies to their combination the deficiencies which each in itself possesses to its immense detriment when used singly.

The fire proof, corrosion proof, and decay proof qualities of reinforced concrete command it most highly for all classes of structures where permanent construction is desired.

For railway structures, perhaps more than for any other class of structures, are these qualities particularly desirable.

Constantly increasing maintenance costs are no doubt directly responsible for the growing demand for permanent construction wherever possible, especially among conservatively and wisely managed railroads. Therefore from the railway standpoint the introduction of reinforced concrete as a building material enjoying as it does a wider range of possible uses and varieties of design than any known building material, and yet so admirably adopted to meet all the requirements of the case in regard to permanence, was indeed most opportune.

In the following discussion the aim shall be—First, to present for consideration a few of the familiar uses of reinforced concrete as applied to railway construction; Second, to point out as clearly as possible the advantages and disadvantages resulting from the use of reinforced concrete in each case, and Third, to compare their costs, where such data were available, with the costs of similar structures built of other materials.

The use of plain concrete in Bridge Piers, Abutments, and Wing Walls, Retaining Walls, Foundation Walls, Station Platforms, Arch Culverts and Arch Bridges led up to old rail reinforcement of flat top culverts familiarly known as rail top culverts, which was perhaps the first attempt at reinforcement of concrete in railway structures.

#### Rail Top Culverts.

The deservedly great popularity of the old rail top culvert, was largely responsible for the ready acceptance of reinforced concrete when its advocates finally offered it to the public. In the way of permanence the old rail top culvert had all the advantages of the more modern bar-reinforced box culvert, but it was not an economical reinforced concrete structure on account of the great excess of steel required.

Indeed it is doubtful if it could properly be termed anything but a protected steel structure, for most engineers in designing them, count upon the steel to carry the load, totally disregarding the concrete except as a protection to the steel. When it is found impossible to pack a sufficient number of old rails in a given section, to give it the desired section modulus, I beams are sometimes substituted for the rails or for every second or third rail, much to the improvement of the structure as regards reliability.

#### Embedded I Beam Culverts.

A great deal of excellent work has been done with the embedded I beam construction, but it is certainly erroneous to call this combination of steel and concrete reinforced concrete. It is better than the old rail construction because the section of each I beam is known, while the old rails are more or less worn, and liable to have dangerous invisible flaws. Moreover, it would require a mathematician of no mean ability to compute the section modulus of some of the old rails frequently used, if the design were to be as accurately made in one case as in the other. A further use of the embedded I beam construction is made in carrying one track over another as is frequently done in the grade separation of two railways intersecting at a difficult angle since the I beams are more easily and positively connected to the longitudinal steel girders than the old rails.

#### Small Culverts.

One interesting though perhaps not very important use of reinforced concrete as applied to railway structures is found in small culverts. On a piece of rather heavy railroad construction recently undertaken, it was decided that no smaller openings than that furnished by a 24-inch C. I. P. would be considered advisable even for the comparatively small drainage areas cut off from the general drainage course by a railway embankment.

Bids were asked on the basis of using C. I. P. for all such structures. Owing to the roughness of the country over which the large and heavy pipes would have to be drawn by team from the nearest railroad station, the contractors showed a ready willingness to substitute concrete culverts for the cast iron upon which they had bid.

It was therefore decided to figure on the use of semi-circular concrete culverts of about the same capacity, with the following results:

A three-foot semi-circular reinforced concrete culvert of 4.78 square feet of cross section suitable for all fills up to 50 feet should be built for \$4.85 per lineal foot (\$1.00 for steel bars in place and \$3.85 for concrete).

The cast iron pipe specified for this same fill would cost \$7.31 per lineal foot and where a concrete bed would be required for it in places at an additional cost of \$1.70 per foot, the total cost would be \$9.00 per lineal foot.

If, however, the lightest weight of 24-inch C. I. P. were acceptable to the railway company, and no concrete bed or cradle required beneath the pipe, still the pipe culvert would cost \$5.69 per lineal foot, as against \$4.85 for the reinforced concrete culvert.

The advantages claimed for the reinforced concrete culverts are:

1st. Strength equal to that of the stronger and heavier grades of C. I. P.

2nd. Durability equal to if not superior to C. I. P.

3rd. More than 50 per cent greater area of water way than was provided by 24-inch C. I. P.

4th. The materials of which it is built are much more easily hauled over rough country, and

5th. It costs only about two-thirds as much as C. I. P.

#### Bridge Floors.

Another use of reinforced concrete as a very important part of a railway structure that seems destined to demand greater attention in the future is found in its application to bridge floors.

As municipal and state legislation becomes more and more severe and exacting on the question of grade separation, railways will be compelled to give the subject of water tight bridge floors more attention than they have in the past.

Many types of the wooden and steel bridge floors have been tried, some of them being very expensive and while satisfactory for a limited time, all have so far proved comparatively short lived.

The accompanying sketch shows a reinforced concrete bridge floor of considerable proportions (81x349 equals 28,269 square feet) which has given perfect satisfaction during the limited time it has been under traffic. (Less than one year.)

The advantages claimed for it are: First, Permanence or long life. Second, Small maintenance costs. Third, Superior track facilities making it possible to have switches and crossovers at any points desired. In fact it may be made a veritable railway yard supported on plate girders. Fourth, It can be made as water-proof as desired, and with the depth of ballast shown the track is easily maintained at reduced cost, and Fifth, Economy both as to material and labor involved in its construction amounting to from 30 to 40 per cent over cost of steel channel floor for some purposes.

A square 10x10 feet contains 3,704 cubic yards of concrete and 718 of steel as built, while a standard channel floor composed of 15-inch channels protected by 4-inch gross and 1-inch net of concrete contains 1,234 cubic yards of concrete and 2,640 of steel.

#### Overhead Highway Bridges.

Overhead highway crossings as they are commonly built of wood or steel are a continual source of annoyance from a maintenance point of view. The sulphurous fumes from locomotives are very active, and rapidly attack all exposed steel, making protection of the best kind very necessary. Wooden floors or suspended wooden ceilings are very poor protection, and are themselves very severely attacked by the destructive agencies that they are intended to keep from the steel. They also rot out quite rapidly.

Added to these unavoidable disadvantages comes the occasional destruction of a complete structure by fire. This is by no means an uncommon occurrence on railroads, and isolated structures in rural districts having no fire protection are usually the ones destroyed in this manner.

Concrete is the only building material that seems absolutely unaffected by ordinary rot, rust, fire or fume corrosion and is therefore unquestionably the best material to use in such cases.

Several roads have already profited by past experience to have all the advantages in the way of permanence of construction that it is possible to obtain through the use of reinforced concrete, and very few of the disadvantages of other types of construction.

Retaining walls built of reinforced concrete offer valuable economies to railways doing any considerable amount of track elevation or depression.

#### Track Elevation.

In the case of track elevation there is no part of the problem that cannot be worked out very satisfactorily in concrete. The retaining wall problem being practically the same in either track elevation or depression, the footings and walls are readily worked up in plain or reinforced concrete.

The structure supporting the ballast and track can also be designed of the same materials, as has been so well illustrated by the track elevation of the C. B. & Q. and the Illinois Central railways in Chicago.

#### Coal Trestles, Bins and Stations.

Coal trestles, coal storage bins, and coaling stations have long been built of reinforced concrete, and are steadily growing in popularity wherever they have been tried.

Grain elevators are often considered railway structures and as such are best built of reinforced concrete. When properly constructed, they are absolutely proof against fire, water or dampness, decay, dust and vermin, and where grain has to be stored for any considerable length of time, these are the important and essential qualities of the ideal grain elevator. A number of railroad companies have shown their appreciation of these excellent qualities by building their elevators of reinforced concrete. The Pennsylvania and Baltimore and Ohio railways have enormous elevators of this kind at Baltimore, Md. The Western, Northwestern and Canadian railroad companies have also been quick to see and appreciate the superiority of reinforced concrete over all other building materials for this class of structures.

#### Docks.

For railways owning valuable water front, and most railways do own some property of this kind, the question of dock construction is an important one. Owing to the great danger from fire, reinforced concrete again affords ample protection, inasmuch as the entire dock from the cutoff of piles may conveniently be built of this material.

The first of a series of piers to be built on the same general scheme along a railway yard ship canal were shown.

The piles are first capped and floored over, then the heavy sea-walls of concrete reinforced against shrinkage and shock are built around this large platform. The footings for columns and side walls are also started from this level, then the cinder filling up to the level of tracks and floors is put in, and in the case of the floors a concrete pavement is laid over the entire area. The side walls and roof are made of concrete, the only exposed steel being the "I" beam girders and purlins of the roof, which might also have been protected, if further protection had been deemed necessary. This pier is divided transversely by a 12-inch concrete fire wall.

#### Stations and Terminals.

Railway stations, train sheds, and terminals built entirely of concrete are not at all uncommon. Some very handsome stations have been built entirely of reinforced concrete in competition with other building materials.

The very extensive use of reinforced concrete in the new terminals of the Hudson tunnels, the Pennsylvania, New York Central and D. L. & W. railways in

and about New York City, shows the growing favor with which railways in the east are now looking upon reinforced concrete construction.

#### Train Sheds.

A section of the Bush type of train shed recently adopted by the C. & N. W. R. in their new Chicago terminal was shown in order to point out the extensive use of reinforced concrete involved in its construction, and the consequent economies from the maintenance standpoint. No steel is in any way exposed to locomotive fumes, which always limited the life of the old type of train shed. The roof and smoke ducts are built entirely of reinforced concrete. Locomotive gases are discharged directly into the open air, much to the improvement of the atmospheric conditions in the shed and the comfort of the passengers. The shed is always light and airy, being free from all offensive odors and the extreme heat usually prevalent in large terminals during the summer months.

#### Subways and Tunnels.

Subways and tunnels are most conveniently and satisfactorily built entirely of concrete or lined with it. The track itself may even be laid directly in the concrete proper, as it is in part of the Hudson tunnels under North river.

A cross section of a tunnel for heavy and fast steam railway traffic was presented showing the entire lining and road bed of concrete, which should prove very economical in maintenance.

The old Lackawanna tunnel through Berger Hill is lined with brick for a part of its length, yet fourteen men are employed every night in the year inspecting the tunnel and repairing the track, which is very difficult to maintain on account of the extremely heavy traffic. Three workmen have lost their lives at this work within the last few years. In the new tunnel this expensive and dangerous maintenance work, costing approximately \$6,000 annually, will be almost entirely eliminated.

#### Road Bed and Track.

If this type of road bed proves efficient and satisfactory on a solid rock foundation, experiments should be made with it in cuts and on well settled earth fills where it may have a great future. As so many of the better railroads now have their lines perfectly ballasted with good clean broken stone or gravel, it is but natural to see how readily these could be converted into first-class concrete. Elevated structures, subways and tunnels, where track is thus laid directly in the concrete, should furnish the earliest reliable data on this point.

#### Shop and Warehouse Buildings.

All the advantages enjoyed by the ordinary reinforced concrete building over like structures built of steel and wood are enjoyed by the reinforced concrete shop and warehouse buildings for railway purposes.

Their chief advantage lies in their fire-proof quality, but the greatly reduced insurance rates obtainable on such buildings and the economy in first cost when their structures are of such size, and are designed for loads heavy enough to render economies in first cost possible, are the arguments that usually decide the question in favor of the reinforced concrete structure.

#### Bridges and Viaducts.

The arch bridge or viaduct seems destined to become the most important of all railway structures that can be built to advantage of plain or reinforced concrete. Not only is the arch with proper foundations the most enduring type of structure that can be built, but it is also a thing of beauty, and its maintenance costs are practically nothing during its entire period of usefulness.

The old stone masonry arch had many fine qualities to recommend it, but it also had its limitations. In fact, the failures of first-class old masonry structures show clearly the necessity of reinforcement and furnish best guide to proper method of reinforcing the concrete to prevent similar failures in reinforced concrete construction.

The concrete arch has many points of superiority over the stone arch. In the first place it can be so reinforced that there will be no tension in any direction in the masonry proper; secondly, economies in yardage of masonry can be nicely worked out in concrete that would be considered inappreciable if the same piers were executed in stone; thirdly, the difficult and expensive construction of skew arch spans when built of cut stone is greatly simplified by the use of concrete. By means of a system of offsets in the skewbacks and the proper distribution of a small amount of reinforcement this skew construction is rendered simple and inexpensive.

And lastly, the concrete masonry is very much cheaper per cubic yard and can be put in place much faster than stone, both decidedly important items to consider, especially when the structure is built under traffic, or where there is a likelihood of losing the centering and structure on account of freshet.

The reinforced concrete arch or viaduct has even greater advantages over like steel structures than over stone masonry for ordinary railway spans.

First. A reinforced concrete arch viaduct may reasonably be expected to have a life many times that of a steel structure, a fact that may justify several times the investment necessary to secure permanent construction.

Second. Its maintenance costs are almost negligible. The elimination of painting costs alone warrants a first cost expenditure 10 per cent to 15 per cent in excess of the first cost of steel structure requiring paint.

Third. Track is easily maintained on such a structure, ordinary track tie and ballast taking the place of the expensive bridge tie of a steel structure, thus guaranteeing a safer and better track for fast traffic, and economy in renewal of timber deck.

Fourth. Danger of derailment is lessened, but even in case of derailment on a concrete structure the consequences would certainly be less disastrous to the traveling public, as well as to the structure itself. A derailed car or a projecting piece of heavy freight upon striking an important compression member of a steel structure has been known to wreck it or render it unsafe for traffic until repaired.

Fifth. In riding over a structure built of reinforced concrete with a ballasted floor, there is no attendant noise and lurching of the train as it strikes the unyielding back walls of the bridge masonry, and the steel floor of the bridge proper.

To the passenger, the absence of the familiar roar in crossing a bridge is particularly gratifying, and the visible hand railing and substantial masonry copings give him an additional sense of security, not enjoyed on most steel structures.

**Tests on Finely Ground Cement**

(Continued from Page 27.)

of 10½ per cent in the strength, I have been investigating the condition of the powder which passes the 200-mesh sieve, and while I have not yet succeeded in making a sufficiently definite separation of sizes, I have shown that the difference in the percentage of impalpable powder is much greater than the difference indicated by the 200-mesh sieve, and I think it probable that if we could test cement with a sieve having openings of about .001 of an inch in diameter, it would be found that the strength was closely proportional to the fineness.

The cement of No. 1 is ground by Fuller mills; the other cement, by Griffin mills, and it is undoubtedly true that the Fuller mills produce a much greater percentage of impalpable powder than the Griffin mills, even when the ordinary sieve tests show the same fineness.

In comparing the strength of these blocks with other record tests, it must not be forgotten that these blocks were prisms twice as high as their width, and most other tests have been made by cubes. The difference in the compressive strength between these prisms and cubes would be at least 11 per cent, according to the generally accepted formula.

Believing that these results will be of interest to you, I remain,  
Yours very truly,  
KENNETH HARTLEY.

**Where Owl Cement is Made.**

LA SALLE, ILL., April 10.—The plant of the German-American Portland Cement Company, manufacturers of the Owl brand, is and has been running full tilt. A ROCK PRODUCTS man had a visit with the genial president, Fritz Worm, whose hospitality was seconded by his chief assistants, G. T. O. Becker, secretary of the company, and F. B. Gerard, the general superintendent.

A trip over the property and through the mill discloses a finely equipped and well regulated organization.

In the quarry, which is in close proximity to the plant, the materials, clay and limestone, are in deposits easily quarried. A steam shovel loads the cars and three locomotives convey the cars to the crushers. There are two of these, one No. 7½ and one No. 5 Gates. The materials then pass through the dryers and into the tube and ball mills. There are six sixty-foot rotary kilns. The clinker is then put through the ball and tube mills and into the storage. The warehouse, which is a new building, has a capacity of 200,000 barrels.

In the power plant, a 2,200-h.p. engine furnishes the power to the plant. The grinding and crushing machinery is run by electric motors on alternating currents. In the coal house the coal is pulverized by tube mills.

On account of the materials from which the Owl cement is made being so closely allied, there is little variance in the finished material. Samples are taken every ten minutes by the chemists, so that the slightest change is noted.

Speaking of their cement, Mr. Worm said: "We aim to operate the entire year and to make a high-grade product. No expense is spared to keep up the quality of Owl cement, and that is why we have no rejected cars."

**Many Buildings Using White Cement**

The Sandusky Portland Cement Company, of Sandusky, O., is supplying its white Portland cement for use on the following important contracts.

Point Building, Cleveland, O.

Western Newspaper Union Building, Chicago.

Clean Dairy Company Building, St. Louis, Mo., for cement floor work.

Campbell Building, Oklahoma City, for facing the entire front.

Battle Creek Sanitarium, for finishing bath rooms.

Dormitory, Pomona College, Claremont, Cal., exterior exterior finish.

Northwestern University Building, Evanston, interior stairs and baluster work.

The company is also furnishing its Medusa waterproof compound on some important contracts, the following representing a few of them:

Swimming pool at Wilmerding, Pa.

Blackstone Hotel, Chicago.

City Hospital, St. Louis, in plaster and wainscoting.

St. Anthony Hotel, San Antonio, Texas.

D. L. & W. collieries, concrete dam, Scranton, Pa.

East Jersey Water Company, concrete sewage tank, Summit, N. J.

**Encourage Good Roads.**

In talking with a veteran retailer the other day he said: "I tell you, most of us retailers do not understand how important it is to have good roads. If we did, we would study up the question and talk more about it to our country friends. This is particularly advantageous to those of us who have some competitive town—that is, getting the business not only for lumber but for groceries and everything they have to sell, because the roads are better. The

bridges are substantial, most of them are built of concrete, and it is easier for the farmer, especially if he has a load of corn or wheat, to go to Johnstown instead of our village. Most of us have been sitting around hugging the stove in the winter time, when we do not have many customers, but if we would get in communication with the Good Roads Association and Government specifications on roads, and if possible some history about how they build roads in England and Europe, where they have real roads, we would not only encourage the farmers to go our way but would get the county commissioners, the county surveyor and the road commissioner pulling for concrete bridges, and the first thing you know we would be selling thirty carloads a year instead of five. Isn't it worth trying?"

**Contract for Molding Sand.**

MEADVILLE, PA., April 10.—Frank Hock, owner of the College Hill Stone Quarry, has secured the contract for furnishing core sand for the Page Boiler Works, the Phoenix Iron Works and the Mick & Jones Jobbing Foundry. In order to supply these three important industries with core sand, it became necessary for Mr. Hock to purchase and install an expensive sand crusher, which is already on the ground and is producing an output of forty tons of sand per day. The output of sand produced at the quarry is also said to be a successful fertilizer for the production of hothouse plants, and in the manufacture of concrete blocks. The Phoenix plant has been using the Hock quarry sand in its molding department for some time and has found it so highly satisfactory that Mr. Hock has made the contracts noted and installed the machinery necessary to make that feature a prominent factor of his business.

**Plant Prepared to Deliver Sand**

BROOKHAVEN, MISS., April 11.—The Southern Gravel and Material Company has recently established a plant to deliver material to the Illinois Central Railway and Mississippi Central Railway. The company is also prepared to deliver material to all markets, and particularly New Orleans. The officers of the company are: Richard Hanlon, St. Louis, president; George W. Neal, Brookhaven, vice-president and general manager, and Richard Hanlon, Jr.

**Sand Plant Destroyed.**

HAGERSTOWN, MD., April 18.—Fire recently destroyed the West Virginia Sand Works, between Hancock and Berkeley Springs, W. Va. The loss was estimated at between \$20,000 and \$30,000. The plant was the largest of several in that section, and employed a large number of hands. The plant was destroyed by fire two years ago and was rebuilt.

**A Practical Concrete Post**

The McElroy concrete post, which was invented by John McElroy, of Cedar Rapids, Ia., is one of the most practical concrete fence posts manufactured. There are many plants in operation which make the McElroy post and some which operate exclusively for this purpose. The molds for this type of post are made by the McElroy Post and Pole Company, of Cedar Rapids, Ia., who will give the details of their post to anyone who inquires.

**Peerless Cement Brick Machine in Demand**

The improved Peerless one-man cement brick machine continues to be the sensation in the trade. L. V. Thayer, president of the Peerless Brick Machine Company, of Minneapolis, Minn., says that the demand for this machine has been phenomenal. The factory has been unable to make them fast enough to meet the demand. There is a reason—it is the fastest and best one-man brick machine on the market. With the new tamping device it can readily turn out 12,000 perfect brick in a ten-hour day.

**Obituary.**

We regret to announce the death of William Frank Hall, the New York representative of the Lehigh Car, Wheel and Axle Works, Catasauqua, Pa., which occurred at his home, Brooklyn, N. Y., March 4, 1909.

The James E. Lennon Lime & Cement Company has been incorporated in San Francisco, with a capital stock of \$20,000, by J. A. White, Francis Schatz, J. E. and E. I. Lennon.

The Natomas Consolidated of California will shortly install a rock crushing plant near Folsom, Cal., where it will operate on the cobbles left by the gold dredges.

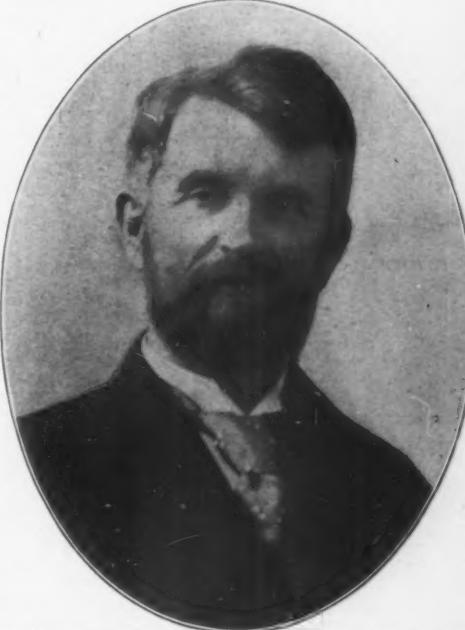
**Tie and Dividing Plates for Concrete Walls**

Zeiser Brothers, of Berwick, Pa., have forwarded ROCK PRODUCTS some interesting illustrated printed matter descriptive of their tie and dividing plates for use in the construction of concrete sidewalks. They state that these plates are designed with the idea of holding the side rails in their proper place without the use of the numerous stakes and braces usually employed, and which some find unsatisfactory; that at the same time they also separate each block from the other, leaving a 3-16-inch space between, thus providing a perfect expansion joint, which, after being touched up with the jointing tool, has the same appearance as a cross joint made in the usual way.

Zeiser Brothers consider that the use of their plates is a great help toward successful sidewalk construction, and at the same time a moneymaker for the contractor, as the forms can be set up in much less time than by the stake and brace method.

Five years ago the Besser Manufacturing Company, Alpena, Mich., entered the field of the manufacture of concrete machinery. At that time the only machine made by the company was a concrete block machine. Since that time other machines have been added to the company's line, until today it is making a complete line, including a mixer, power drawn tile machine, power sewer tile machine, power brick machine, etc. Not only have new machines been added to the line, but the old machines have been improved to meet the more critical demands of the concrete trade.

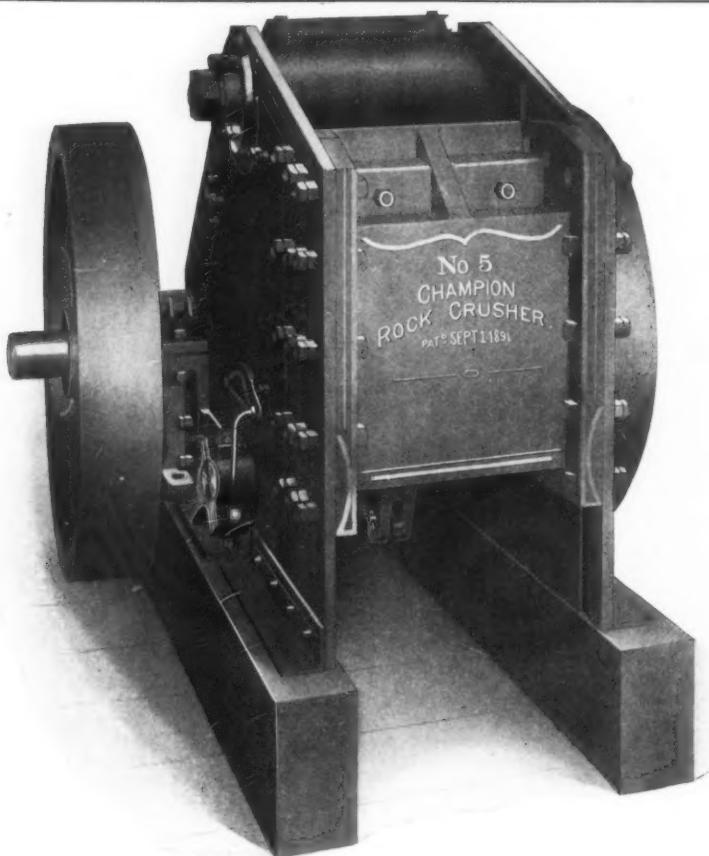
Herman Besser, with his son J. H. Besser, are the men who have built up this business. Both are not only business men of high standing and ability, but they have special talent in the mechanical and inventive field, the machines made by the company to a large extent, if not entirely, being the product and results of their ideas.



HERMAN BESSER, PRESIDENT BESSER MANUFACTURING COMPANY, ALPENA, MICH.

The Besser Manufacturing Company has just made some improvements on its mixer which makes it in many ways superior to many on the market today. The company has issued a large catalog showing the complete line of Besser concrete machinery, and a copy of this catalog can be had by addressing the Besser Manufacturing Company, Alpena, Mich.

The Clinton Metallic Paint Company, of Clinton, N. Y., are presenting to the trade a circular in regard to the coloring of concrete walks. They claim to have worked out this most difficult problem and their success in the past five years has proved it. Every concrete sidewalk man who has used their "Special Sidewalk Black" has pronounced it perfect.



CHAMPION ROCK CRUSHER, MADE BY THE AMERICAN ROAD MACHINE COMPANY.

They put up their "Special Sidewalk Black" in paper bags of four pounds each. One bag will color a square of walk, top coating, or a barrel of cement. They say that it is not only the cheapest coloring for this work, but that it mixes easier than any other black on the market. By using the coloring in this way, instead of shoveling it in and guessing at the quantity, they claim you are assured of a uniformly colored walk, without the loss which always occurs in the use of a bulk color of doubtful origin, which will, from the guesswork way of mixing, dry out in many different shades. They lay special stress on the fact that their coloring is neither aciduous nor greasy, and that it is absolutely uniform. No chemical action can result as it is purely a mineral product, the same as the cement itself.

#### The Champion Steel Rock Crusher.

The work of designing and constructing a satisfactory rock crushing machine is not a job to be placed in the hands of amateurs. There are few pieces of machinery which are called upon to undergo such a terrific strain as a crusher. The very nature of its work—that of reducing large blocks of hard rock to a product suitable for ballast, concrete or road metal—presupposes that it must be built scientifically and well, or it will shortly be consigned to the graveyard of the junkpile. A crushing machine should be light enough for convenience in handling, but heavy enough to have all the essentials of strength and durability. It should be simple in construction, yet facilities should be provided for oiling, for easily changing the size of the product, and for replacing worn parts. It should be efficient, but economy in operation and the life of the machine should not be sacrificed to a large output for a short period. A rock crusher, in short, is not the product of a month or even of a year, but it is the development of years of painstaking study and effort.

The Champion Steel Rock Crusher, shown in the accompanying illustration, has been on the market for the past eighteen years. As will be seen by the cut, this machine is made almost entirely of steel. The frame of the Champion crusher is of two steel plates which will not bend or break. These plates are each planed with a groove, and the stationary jaw, or front end of the machine, is fitted with a tongue on either side; these tongues fit into the grooves of the side plates, thus practically making the sides and front of the machine one solid piece. The frame is also carefully bolted together, and the bolts are held in place by double nuts. The main shaft, upon which the fly-wheels are suspended, is elliptical in shape, and one revolution of these wheels therefore produces two strokes of the moving jaw. It is plain, therefore, that the Champion crusher need only be driven one-half as fast as machines using an eccentric to produce the same results. High speed

means friction and heating of shafts in heavy machinery, and this means wear and expense. By reducing friction to a minimum in the Champion crusher, the possibilities of wear to the working parts, and of expense for repairs, has been reduced proportionately.

There are more than 3,000 Champion crushers in use at the present time, operating in hard and soft materials and under all conditions of service. These machines have been sold in the United States, Canada, Mexico, Continental Europe, Japan, Australia, Africa, Cuba and in the Philippine Islands.

The Champion Crusher is made in several sizes, ranging in capacities from 75 to 300 tons daily capacity. The Good Roads Machinery Company, of Kennett Square, Pa., will be glad to furnish a complete catalogue of Champion crushing, elevating, screening, conveying, contractors' and quarry machinery, tools and supplies to anyone who may apply for it.

A new departure in the construction of gasoline locomotives has recently been made by Ernst Wiener Company, whose general offices are at 50 Church Street, New York City.

The accompanying illustration shows this new type and it can be easily seen that it is most simple in its construction, the trucks being made up of the Wiener standard one-piece 6-inch channel frame, Wiener standard roller bearing and draft gear.

The motor, which is a Brownell 35-h. p. water-cooled type, is located under the hood and is controlled by an advance and retard throttle and spark which is

placed directly in front of the operator seat. The driving power is four 14-inch diameter cast iron wheels, which are driven by chains from the transmission gear.

The locomotive has forward and reverse speeds, the forward speed averaging from three to twelve miles per hour in hauling loads of twenty-five tons. The gasoline tank has a capacity of twenty gallons, which will last for two working days of ten hours each.

The adaptability and practicability of the locomotive were shown when it was used by a road building contractor who hauled his stone from the quarry to the crusher. He says he has reduced the cost of hauling material from 29 cents to 11 cents per yard mile.

They believe that in time the locomotive will prove an indispensable factor in the different industries in which industrial railways are now used. They have one of these locomotives at their Brooklyn shops, Fifth Street and Second Avenue.

The specifications are as follows:

Height: 58".

Length over all, end of buffer to end of buffer: 113".

Width: 36 1/2".

Gauge: 24", 30", 36".

Weight: About 5,000 lbs. (24" gauge locomotive).

Hauling power: 25 tons.

Driving wheels: Four 14" diameter, 1" flange, 3" tread. Deep chill.

Wheelbase: 30" to 48", according to gauge and curves of track.

Speed: 3-12 miles per hour. Locomotive also has reversed speed.

Cylinders: Four 4 1/2" x 5". Cast in pairs.

Ignition: Jump spark, arranged for two sets of plugs; one can be used for storage battery, and the other for dynamo or magneto. Single coil with distributing timer.

Radiator: Briseoe Finn Tube, made of 5/16" and 1/2" seamless tubing with fins 1 1/2" wide, sweated to the tubes.

Gasoline: Capacity, 20 gallons.

Gasoline used a day: 10 gallons (10 hours a day).

Truck: Wiener standard one-piece 6" channel frame. Round buffer. Heavy construction.

Bearings: Wiener standard non-friction roller bearings.

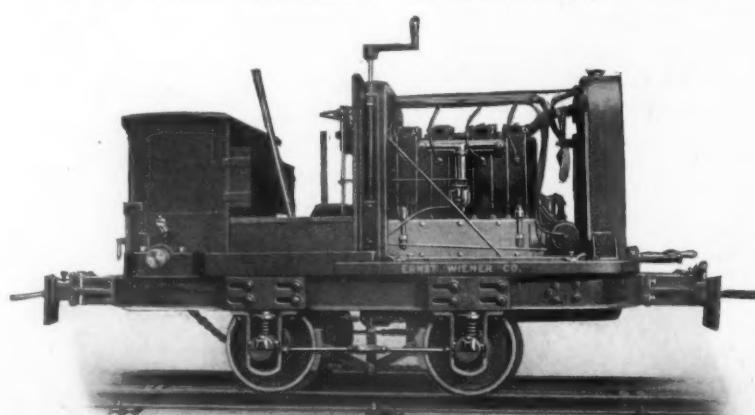
Draft gear: Double acting single spring with link and pin coupler.

Sand box: Ample supply.

The Osborne Engineering Manufacturing Company, of New York City, manufacturers of the Osborne pneumatic blast separator for separation and collecting dust, have installed machines at the works of the Aluminum Company of America, at East St. Louis, Ill., which have a capacity of eight tons per hour of finished product and will screen 95 per cent 100-mesh fine. This output is being obtained on lime and also on bauxite, the latter containing from 10 to 12 per cent of moisture.

Machines have been installed for the Chas. Warner Company at Cedar Hollow, Pa., of a given capacity of seven and nine-tenths tons per hour of hydrated lime that will screen 95 per cent 100-mesh fine. They are also obtaining 10 tons per hour of hydrated lime 95 per cent 50-mesh fine. They are now installing these machines for the Pittsburg Plate Glass Company and the Pennsylvania Salt Manufacturing Company for use on hydrated lime and alumina, to give capacities ranging from six to ten tons per hour of finished product that will screen 95 per cent 100-mesh fine. They are also building these machines to be used on phosphate rock and sulphur to give a finished product 98 per cent 200-mesh fine.

Their claims are the low horse power required per ton of finished product delivered, the large capacities obtained (ranging from three and one-half to



NEW TYPE OF GASOLINE LOCOMOTIVE MADE BY THE ERNST WIENER COMPANY, NEW YORK.

The Eureka crusher resembles the common jaw crusher in appearance only—it possesses an entirely different and distinct principle of action. It can, moreover, be adjusted by a simple twist of a set wheel to crush rock or ore to six-inch fragments or to powder fineness, or to any size between powder and six inches. Notwithstanding its wide range of work, The Eureka crusher is as simple, light and compact as any stone crusher on the market and it costs as little as any well-built stone crusher can cost. Being well built and of few simple parts, its repair costs are very small.

The Eureka crusher is not an untried machine. The first one was built in 1902 and since then over ten thousand have been installed in Germany, South Africa, Norway, Sweden, Italy and all English possessions, and are in use by foreign mining engineers, quarrymen, and contractors for road work, concrete work and ballasting. The Eureka Stone and Ore Crusher Company invites comparison of its machine with every other crusher on the market, no matter what character of material is to be crushed. The company further stands ready to prove the superiority of its crusher, by installing one, and allowing a full test for 30 days. The trial will not cost anything if the machine fails to do what the makers claim for it. Send sample of stone to be crushed and to what size you wish it crushed, also the number of tons (2,000 lbs. to ton) in 10 hours that you wish crushed. Wherever these crushers have been used they have proved eminently

successful and the Eureka Stone and Ore Crusher Company have numbers of letters from companies using their crushers in which they say they have done all that the makers claimed for the machine and even more.

The economical crushing of stone, no matter for what purpose, is the keynote of success. It is claimed that the machine can be operated with less power, less wear on the parts and with less labor than any other crusher. It will pay anyone to investigate these claims as complete particulars can be had by writing the Eureka Stone and Ore Crusher Company at Cedar Rapids, Iowa.

Hercules concrete machinery hardly needs any introduction to the readers of our paper. This machinery is manufactured by the Century Cement Machine Company, 288-298 St. Paul Street, Rochester, N. Y. The company's new catalogue enumerates the complete line and also shows handsome photographs of concrete structures in all parts of this country erected by the users of these machines. Hercules Block Machines are designed to meet every demand made upon them and are equally desirable for light as well as heavy construction. It is claimed for the Hercules that they make all kinds of blocks that the other machines make and a great many that the others do not make. The Hercules Concrete Mixer is a perfect proportioning, continuous mixer, and there are hundreds of them in daily use, giving entire satisfaction.

The J. B. Foote Foundry Company, of Fredericksburg, Ohio, is offering as a leader an automatic cement block machine, which uses the Walter action exclusively. On this machine the mold is turned, the cores withdrawn, and the block released without removing the hands from the lever. The machine is designed for speed. The Foote company is one of the oldest in the concrete machinery line.

The Utah Keene Cement Company of Richfield, Utah, has been incorporated for the purpose of operating a mill at Sigurd, Sevier County, adjacent to the Jumbo Plaster and Cement Company's mill. Capital is \$160,000 in shares of \$1 each, of which 30,000 shares are preferred and \$130,000 common stock, the preferred stock to draw 7 per cent interest and cumulated dividends. The preferred stock and 30,000 shares of the common stock will remain in the treasury. J. M. Bickel, of Alva, Okla., is president; Lorenzo Neilsen, of Richfield, vice-president; J. F. Chidester, of Richfield, treasurer; Benjamin F. Bickel, of Richfield, secretary; N. C. Paulson, Lars H. Outzen, of Richfield, and George M. Smoot, of Provo, additional directors.

The completion of the Weisenberg Bridge, near New Smithville, Pa., recently, marks a new era in bridge construction in this county, as it is the first reinforced concrete structure of this kind. Its dimensions are forty by twenty feet. The plans were drawn by Robert S. Rathbun and the work was done by the Weaver Construction Company.

## CLASSIFIED ADVERTISEMENTS

Advertisements will be inserted in this section at the following rates:

For one insertion ..... 25 cents a line  
For two insertions ..... 45 cents a line  
For three insertions ..... 60 cents a line

Eight words of ordinary length make one line.  
Heading counts as two lines.  
No display except the headings can be admitted.

Remittances should accompany the order. No extra charges for copies of paper containing the advertisement.

### EMPLOYEES WANTED

#### WANTED.

If you are in need of or wish to sell anything which comes under any of these classifications, write us. If you have something not coming under these classifications we will create one for you.

#### WANTED.

A first class, experienced travelling Portland cement salesmen. No beginners or parties handling other lines need apply. Give references, and salary expected. Travel out Kansas City. Western territory. Address Box 700, care ROCK PRODUCTS.

### EMPLOYMENT WANTED

#### POSITION WANTED.

Mechanical engineer, specialist for sand-lime-brick plants with fourteen years' experience in Germany and the United States; graduate of the College of Technology of Neustadt, Germany, wants position. Has built and successfully managed sand-lime-brick plants in both countries and can give references. Address W. F. S., Box 701, care ROCK PRODUCTS.

### MACHINERY FOR SALE

#### CRUSHER FOR SALE.

Gates No. 4 Gyratory, in fine condition. Cheap. H. P., Box 2, Sta. A., Cincinnati, O.

#### FOR SALE.

20-ton overhead traveler, 38-foot span; electric power or rope drive, 135 feet track; strictly first-class. Also 20-ton stiff leg stone yard and quarry derrick, Scoville make. 50-foot boom, double engines on mast, revolves full circle either direction. Fine condition. WILLIS SHAW, 171 La Salle St., Chicago.

#### ENGINES AND BOILERS FOR SALE.

Engines—Corliss, Automatic and Throttling, all sizes from 1 to 500 H. P.

Boilers—Horizontal, Portable and Vertical, all sizes from 1 to 200 H. P.

Pumps, Heaters, Tanks, Sawmill and General Machinery.

Write for our prices on your requirements.

THE RANDLE MACHINERY CO.,  
1745 Powers St., Cincinnati, O.

### MATERIAL WANTED

#### WANTED.

Quotations wanted on limestone sand delivered on team track in South Chicago; also  $\frac{1}{4}$ -inch and  $\frac{1}{2}$ -inch screenings—carloads. XM, care Rock Products.

### BUSINESS OPPORTUNITIES

#### GYPSUM ROCK PLANT SITE.

If you are interested in a site for a gypsum rock plant write M. J. Skivington, of Mumford, N. Y.; he can interest you. Located near four railroads.

#### CAPITALIST.

Energetic man with \$50,000 or \$100,000 can find profitable manufacturing investment by addressing the subscriber. Previous experience in the line of building materials is indispensable. A fine business opening for the right man. Bank reference is requested. Address FREDERICK S. BUTT, Commercial Club, Louisville, Ky.

#### WANTED.

Developed and undeveloped lime properties. Write us what you have with full information as to what has been done, and all information which you have available, giving location, on what railroad, amount of stripping necessary, depth of bed, nature of rock, and analysis of same if available. Address The John D. Owens & Son Co., Owen, Marion Co., O.

### CORLISS ENGINES

16 x 30 Frick Girder Frame.  
18 x 42 Allis " "  
24 x 30 Clark Heavy Duty.  
26 x 30 " "  
30 x 48 Cooper Girder Frame.

#### AUTOMATIC ENGINES

13 x 14 Brownell self contained on sub-base.  
13 x 13 Ball.  
20 x 30 Buckeye Heavy Duty.  
All sizes from 20 to 300-H. P.

BELTING, SHAFTING & PULLEYS  
BOILERS—TUBULAR OR WATER TUBE

Cleveland Belting & Machinery Co.  
Cleveland, Ohio

### MACHINERY WANTED

#### WANTED.

Gates or Austin gyratory crusher, not less than No. 6. Must be in first class condition and a bargain. Address Cheney Marble White Lime Co., Chepultepec, Ala.

### THE HENRY MARTIN BRICK MACHINE MFG. CO.

LANCASTER, PENNA.

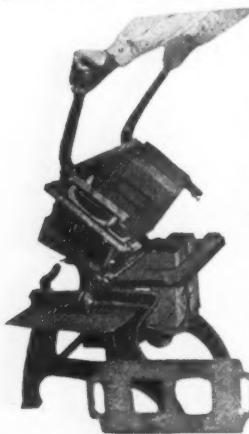
ROCK CRUSHING MACHINERY  
BRICK-MAKING MACHINERY  
CLAY WORKING APPLIANCES  
CEMENT BRICK  
MACHINERY  
SAND GRINDING  
MACHINERY  
SAND DRYERS, BRICK DRYERS, ETC.

SEND FOR PLANS AND ILLUSTRATED CATALOGUE

# Foote's Leader

## AUTOMATIC CEMENT BLOCK MACHINE

We use the Walter Action Exclusively



The Mold is turned the cores withdrawn the block released without removing the hands from the levers.

Using and controlling the **WALTER ACTION**, which is to the Cement Block Machine what the Appleby Knotter was to the self-binder.

It's the limit of human ingenuity. If you are making blocks for profit you **MUST** have a high speed machine, and you can then compete with anyone.

It costs no more than an old-fashioned machine where each operation must be done separately. The principles are in keeping with the 20th Century. The up-to-date man, in the matter of equipment, is the one that makes the money. **WE ARE OLDEST IN THE FIELD**. Send a postal for our Catalogue. There are lots of good things in it you want to know and it's **YOURS FOR THE ASKING**. Write to-day.

**The J. B. Foote Foundry Company**

Dept. 5, FREDERICKTOWN, O.

## Fast Trains Day and Night

on the

### MONON ROUTE

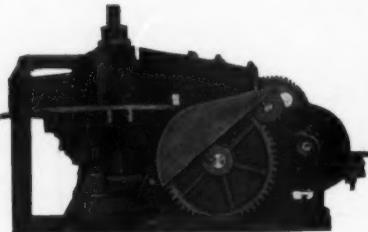
EXCELLENT SERVICE  
BETWEEN

**Chicago  
La Fayette  
Indianapolis  
Cincinnati  
Dayton  
West Baden and  
French Lick Springs  
Louisville**

Electric Lighted Standard Sleepers on Night Trains, Parlor and Dining Cars on Day Trains

Frank J. Reed, G.P.A. E. P. Cockrell, A.G.P.A.  
CHICAGO

## Sand Lime Brick Machinery

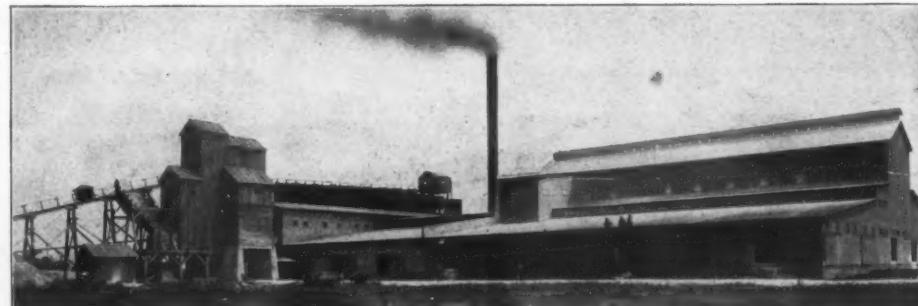


### The Perfection Press

is one of the most powerful Brick Machines on the Market. Not only does it exert tremendous pressure—but all the pressure is placed on one brick. It is especially adapted for making fine face brick.

**The Cleveland Brick Machinery Co.**

Wickliffe, Ohio



WORKS AT GIBSONBURG, OHIO  
Largest Lime Manufacturing Plant in the World

## Banner Hydrate Lime SANDED WALL PLASTER

### Ground Lime and Fertilizer

Manufactured by

**National Mortar and Supply Co.**  
209 Ninth Street PITTSBURGH, PA.

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Alpha Portland Cement Co. .... 2	Chattanooga Paint Co. .... 59	Hotchkiss, Wm. A., Sales Agt. .... 1	Mosberger-Langer Iron Co. .... 16	Sandusky P. C. Co. .... 8
Alsing, J. R., Eng. Co. .... 70	Chemical Stucco Retarder Co. .... 73	Howell Mining Drill Co. .... 82	Mulconroy Co., Inc. .... 65	Scioto Lime & Stone Co. .... 14
American Cement Co. .... 84	Chicago Belting Co. .... 1	Hudson Mfg. Co. .... 61	National Lime & Stone Co. .... 14	Sharon Steel Hoop Co. .... 72
American Cement Roofing Co. .... 12	Chicago Portland Cement Co. .... 2	Illinois Cent. Ry. .... 17	National Mortar & Supply Co. .... 58	Shuart-Fuller Mfg. Co. .... 65
American Clay Working Machinery Co. .... 83	Chickamauga Cement Co. .... 2	Ill. Powder Co. .... 1	New Jersey Lime Co. .... 14	Simpson Cement Mold. Co. .... 60
American Gypsum Co. .... 73	Chrome Steel Works. .... 82	Independent Powder Co. .... 15	Niagara Gypsum Co. .... 78	Sturtevant Mill Co. .... 11
American Process Co. .... 18	Cleveland Brick Machinery Co. .... 58	International Sand-Lime Brick & Mach. Co. .... 71	Northwestern States P. C. Co. .... 9	Superior Portland Cement Co. .... 43
American Sandstone Brick Machine Co. .... 82	Cleveland Belting & Mch. Co. .... 57	Iowa Hard Plaster Co. .... 79	Nuttall, R. D., Co. .... 17	Svenson-Shuman Machine Co. .... 67
American Soap Stone Finish Co. .... 14	Clinton Metallic Paint Co. .... 60	Ironton Portland Cement Co. .... 9	Ohio-Binns Retarder Co. .... 75	Taylor Iron & Steel Co. .... 69
American Steel and Wire Co. .... 63	Clyde Iron Works. .... 6	Johnston & Chapman Co. .... 11	Ohio Fibre, Machy Co., The. .... 78	Union Mining Co. .... 1
Anchor Concrete Stone Co. .... 62	Concrete Stone & S. Co. .... 81	Kelley Island Lime & Trans. Co. .... 13	Ohio Steel Wheelbarrow Co. .... 72	United Kansas Port. C. Co. .... 7
Anderson Mfg. Co. .... 10	Continental Car & Equip. Co. .... 12	Kent Machine Co. .... 65	Ohio & Western Lime Co. .... 13	United States Gypsum Co. .... 76
Anhydrous Pressed Stone Co. .... 10	Davenport Loco. Works. .... 17	Kent Mill Co. .... 68	Oklahoma Port. Cement Co. .... 9	United States Silica Co. .... 41
Ash Grove Lime & P. C. Co. .... 18	De Smet, Geo. .... 8	Keystone Traction Drill Co. .... 70	Osborne Eng. Mfg. Co. .... 64	Universal Portland Cement Co. .... 41
Ashland Fire Brick Co. .... 18	Dexter Portland Cement. .... 1	King, J. B., & Co. .... 78	Ottawa Silica Sand Co. .... 1	Urschel Bates Valve Bag Co. .... 42
Atlas Car & Mfg. Co. .... 16	Dixie Portland Cement Co. .... 7	Kosmor Portland Cement Co. .... 42	Pearless Brick Mach. Co. .... 79	Utica Hydraulic Cement Co. .... 42
Atlas Portland Cement Co. .... 84	Duff Patents Co. .... 16	Kritzer Company, The. .... 5	Pierce City Lime Co. .... 10	Vulcan Steam Shovel Co. .... 1
Austin Mfg. Co. .... 67	Dunning, W. D. .... 83	Lehigh Car Wheel & Axle Works. .... 69	Pierce-Walton Co., The. .... 16	Wadsworth, Howland Co. .... 9
Bacon, Earle C. .... 65	DuPont Powder Co. .... 15	Lehigh Portland Cement Co. .... 2	Penn Allen Port. Cem. Co. .... 9	Warner, Charles, Co. .... 8
Ball & Brookshire. .... 60	Eaton Portland Cement Co. .... 43	Louisville Fire Brick Works. .... 16	Pennsylvania Cement Co. .... 7	Wiener Co., Ernst. .... 83
Barrett Mfg. Co. .... 10	Electric Cement Post Co. .... 61	McDonnell Boiler & Iron Wks. .... 72	Peninsular Port. Cement Co. .... 2	Western Lime & Cement Co. .... 13
Bartlett, C. O., & Snow Co., The. .... 65	Empire Gypsum Co. .... 78	McElroy Post & Pole Co. .... 16	Perfection Block Mach. Co. .... 62	West Jersey Bag Co. .... 41
Berg Mach. Mfg. Co., The. .... 71	Ehrsam, J. B., & Sons Mfg. Co. .... 74	Marsh, G. C. .... 66	Pettyjohn Co., The. .... 43	Whitehall Port. Cement Co. .... 44
Besser Mfg. Co. .... 67	Eureka Stone & Ore Crusher Co. .... 66	Marblehead Lime Co. .... 12	Phoenix Cement Co. .... 1	Williams, C. K., & Co. .... 18
Best Bros. Keene's Cement Co. .... 79	Farnham Cheshire Lime Co. .... 13	Marquette Cement Mfg. Co. .... 1	Plymouth Gypsum Co., The. .... 79	Williams Contractors' Supply Co. .... 18
Brown Hoisting Mach. Co. .... 64	Farrington, H. .... 18	Martin, Henry, Brick Mach. Mfg. Co. .... 57	Power & Mining Machy. Co. .... 4	Williams Patent Crusher & Pulverizer Co. .... 69
Buckbee, J. C. Co. .... 64	Foote, J. B., Foundry Co. .... 58	Meadham & Wright. .... 9	Rader-Gustave Co. .... 75	Winsat Cooperage Co. .... 18
Buckeye Fire Clay Co. .... 16	Fowler & Pay. .... 12	Mitchell Lime Co. .... 13	Richardson Scale Co. .... 70	Wolverine Portland Cement Co. .... 2
Bucyrus Co., The. .... 70	French, Samuel H., & Co. .... 1	Racketton Mineral Paint Wks. .... 59	Ruggles-Coles Eng. Co., N. Y. .... 18	
Burton Powder Co. .... 14	Fuller Eng. Co. .... 17	Ruggles-Coles Eng. Co., N. Y. .... 59	Sackett Plaster Board Co. .... 77	
Butterworth & Lowe. .... 67	Gandy Belting Co., The. .... 82	Rummel Bros. Co., The. .... 68		
Caldwell, H. W., & Sons Co. .... 17	Goetz, C. W., Lime & Cement Co. .... 12	Richardson Scale Co. .... 70		
Carolina Portland Cement Co. .... 1		Ricketton Mineral Paint Wks. .... 59		
Castalia Portland Cement Co. .... 7		Ruggles-Coles Eng. Co., N. Y. .... 18		
Cement Machy. Co. .... 65		Sackett Plaster Board Co. .... 77		

## CLASSIFIED BUSINESS DIRECTORY

## BAGS.

Urschel Bates Valve Bag Co.  
West Jersey Bag Co., The.

## BALL MILLS.

Alsing, J. R., Eng. Co.  
Power & Mining Mch. Co.

## BELTING.

Cleveland Belt & Machy. Co.  
Chicago Belting Co.  
Gandy Belting Co.

## BRICK.

Harbison-Walker Refractories Co.

## BUCKETS, DUMPING AND GRAB.

Atlas Car & Mfg. Co.  
Brown Hoisting Mac. Co.

## BURIAL VAULTS MOLDS.

Ball & Brookshire.

## BURR STONES.

Charles, J. M.

## CEMENT BRICK MCHY.

Bartlett, C. O., & Snow Co.  
Martin-Henry Brick Machine Mfg. Co.  
McElroy Post & Pole Co.

## CEMENT HYDRAULIC.

Carolina Portland Cement Co.  
Chickamauga Cement Co.  
Fowler & Pay.  
Utica Hydraulic Cement Co.

## CEMENT MCHY.

Alsing, J. R., Eng. Co.  
Anhydrous Pressed Stone Co.  
Berg Mach. Mfg. C., Ltd., The.  
Besser Manufacturing Co.  
Cement Machinery Co.  
Cummer, F. D., & Son Co.  
Kent Mill Co.  
Peerless Brick Machine Co.  
Power & Mining Machy. Co.  
Ruggles-Coles Eng. Co.

## CEMENT, PORTLAND.

American Cement Co.  
Alma Portland Cement Co.  
Alpha Portland Cement Co.  
Ash Grove Lime & Portland Cement Co.  
Atlas Portland Cement Co.  
Best Bros. Keen Cement Co.  
Carolina Portland Cement Co.  
Castalia Portland Cement Co.  
Chicago Portland Cement Co.  
De Smet, Geo. W.  
Dexter Portland Cement Co.  
Dixie Portland Cement Co.  
Edison Portland Cement Co.  
French, Samuel H., & Co.  
Goets, Charles W., Lime & Cement Co.  
Hartranft, Wm. G., Cement Co.  
Ironton Portland Cement Co.  
Kosmos Portland Cement Co.  
Lehigh Portland Cement Co.  
Marquette Cement Mfg. Co.  
Meacham & Wright Co.  
Maryland Portland Cement Co.  
Northwestern States Portland Cement Co.  
Oklahoma Port. Cement Co.  
Omega Portland Cement Co.  
Penn Aiken Portland Cement Co.  
Pennsylvania Cement Co.  
Pennsylvanian Portland Cement Co.  
Sandusky Portland Cement Co.  
St. Louis Portland Cement Co.  
Superior Portland Cement Co.  
Universal Portland Cement Co.  
United Kansas Portland Cement Co.  
Warner, Chas., Co.  
Western Lime & Cement Co.  
Whitehall Port. Cement Co.  
Wolverine Portland Cement Co.

## CEMENT ROOFING MACHINERY.

American Cement Roofing Co.

## CLAY PRODUCTS.

Buckeye Fire-Clay Co.  
Western Lime & Cement Co.

## CLAYWORKING MCHY.

Bartlett, C. O., & Snow Co.  
Berg Mach. Mfg. C., Ltd., The.  
Cummer, F. D., & Son Co.

## CONCRETE BLOCK MCHY.

Anchor Concrete Stone Co.  
Besser Manufacturing Co.  
Century Cement Mch. Co.  
Concrete Stone & Sand Co.  
Foote, J. B., Foundry Co.  
McElroy Post & Pole Co.  
Perfection Block Mch. Co.  
Pettyjohn, The, Co.  
Simpson Cement Mold Co.

## CONCRETE MIXERS.

Cement Machinery Co.  
Electrical Cement Post Co.  
Kent Mach. Co.

## CONCRETE BEADS.

Carolina Portland Cement Co.  
Portland Cement Co.

## COLORINGS, BRICK AND MORTAR.

Chattanooga Paint Co.  
Clinton Metallic Paint Co.  
Ricketson Mineral Paint Works.  
Williams, C. K., & Co.

## CONTRACTORS' EQUIPMENT.

The Pierce-Walton Co.

## CONVEYORS.

Austin Mfg. Co.  
Bartlett, C. O., & Snow Co.  
Caldwell, H. W., & Sons Co.  
Ersham, J. B., & Sons Mfg. Co.  
Power & Mining Machy. Co.

## CRUSHERS.

Alsing, J. R., Eng. Co.  
Austin Mfg. Co.  
Bacon, Earl C.  
Bartlett, C. O., & Snow Co.  
Butterworth & Lowe.  
Chrome Steel Wks.  
Ersham, J. B., & Sons Mfg. Co.  
Eureka Stone & Ore Crusher Co.  
The Good Roads Machy. Co.  
Kent Mill Co.  
Marsh Co., G. C.  
Martin, Henry.  
McDonnell Boiler & Iron Works.  
Power & Mining Machy. Co.  
Sturtevant Mill Co.  
Taylor Iron & Steel Co.  
Williams Contractors Supply Co.  
Williams Pat. Crusher & Pulverizer Co.

## CUT GEARS.

Nuttall, R. D., Co.

## DRILLS.

Keystone Traction Drill Co.  
Howell Mining Drill Co.  
Williams Contractors Supply Co.

## DRYERS.

Alsing, J. R., Eng. Co.  
American Process Co.  
Bartlett, C. O., & Snow Co.  
Cummer, F. D., & Son Co.  
Ruggles-Coles Eng. Co.

## DRYER CARS.

Power Mining & Mch. Co.

## DUMP CARS.

Atlas Car & Mfg. Co.  
Continental Car & Equip. Co.  
Power & Mining Machy. Co.  
Sackett Screen & Chute Co., H. B.

## DYNAMITE AND POWDER.

Aetna Powder Co.  
Burton Powder Co.  
DuPont Powder Co.  
Illinois Powder Co.  
Independent Powder Co.

## ENGINEERS.

Bacon, Earl C.  
J. C. Buckbee Co.  
Fuller Eng. Co.  
Spackman, Henry, Eng. Co.

## EXPANSION BOLTS.

Farrington, H.

## FIBRE MCHY.

Ohio Fibre Mch. Co.  
Shuart-Fuller Mfg. Co.

## FIRE BRICK.

Ashland Fire Brick Co.  
Buckeye Fire-Clay Co.  
Carolina Portland Cement Co.  
Laclede-Christy Clay Products Co.  
Louisville Fire Brick Co.  
Union Mining Co.

## FUSES.

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GAS AND GASOLINE ENGINES.

Power & Mining Mch. Co.

## GAS PRODUCERS.

Duffs Patents Co.  
Power & Mining Mch. Co.

## GYPSUM.

American Gypsum Co.  
Carolina Portland Cement Co.  
Empire Gypsum Co.  
Iowa Hard Plaster Co.  
Plymouth Gypsum Co.  
Niagara Gypsum Co.  
U. S. Gypsum Co.

## GYPSUM MCHY.

Butterworth & Lowe.  
Cummer, F. D., & Son Co.  
Ersham, J. B., & Sons Mfg. Co.  
McDonnell Boiler & Iron Works.

## HARDENING CYLINDERS.

Alsing, J. R., Eng. Co.

## HOSE.

Mulconsay Company, Inc.

## HYDRATING CYLINDERS.

Alsing, J. R., Eng. Co.  
Clyde Iron Works.  
Kritzer, The, Co.  
National Mortar & Supply Co.

## HYDRATING MCHY.

Clyde Iron Works.  
Kritzer Co., The.

## LIME.

Ash Grove Lime & P. C. Co.  
Carolina P. C. Co.  
Farman Cheshire Lime Co.  
Fowler & Pay.  
Goets, Charles W., Lime & Cement Co.  
Ohio & Western Lime Co., The.  
Kelly Island Lime & Trans. Co.  
Marblehead Lime Co.  
Mitchell Lime Co.  
National Lime & Stone Co.  
National Mortar & Supply Co.  
New Jersey Lime Co.  
Pierce City Lime Co.  
The Scioto Lime & Sone Co.  
Western Lime & Cement Co.

## LIME, HYDRATED.

Ash Grove Lime & Portland Cement Co.  
Ohio & Western Lime Co., The.  
Marblehead Lime Co.  
National Lime and Stone Co.  
National Mortar & Supply Co.  
The Scioto Lime & Stone Co.  
Warner, Chas., Company.

## LOCOMOTIVES.

Davenport Locomotive Wks.

Ernst Wiener Co.

## METAL LATH.

Carolina Portland Cement Co.

## PLASTER MCHY.

American Steel & Wire Co.  
Butterworth & Lowe.  
Cummer, F. D., & Son Co.  
Dunning, W. D.  
Empire Gypsum Co.  
Ersham, J. B., & Sons Mfg. Co.  
Mostberger-Langner Iron Co.  
Sharon Steel Hoop Co.  
Williams Pat. Crusher & Pulverizer Co.

## PLASTER.

American Gypsum Co.  
Best Bros. Keene's Cement Co.  
Carolina Portland Cement Co.  
Iowa Hard Plaster Co.  
King, J. B., & Co.  
National Mortar & Supply Co.  
Plymouth Gypsum Co., The.  
Rader, Gustave, Co.  
Sackett Plaster Board Co.  
U. S. Gypsum Co.  
Wheeling Wall Plaster Co.

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Kent Mill Co.  
Lehigh Car, Wheel & Axle Wks.  
Raymond Bros. Co., The.  
Sturtevant Mill Co.  
Williams Pat. Pulverizer Co.

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Illinois-Central R. R.  
Monon Route.

## RAILROAD MATERIAL.

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Ernst Wiener Co.

## ROOFING MATERIAL.

Carolina Portland Cement Co.

## SAND.

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United States Silica Co.

## SAND-LIME BRICK MCHY.

American Clay Wking. Mch. Co.  
American Sand Stone Brick Co.  
Berg Mach. Mfg. C., Ltd., The.  
Cleveland Brick Machy. Co.  
International Sand-Lime Brick & Mach. Co.

## SAND LIME ENGINEER.

James F. Hobart.

## SCALES.

Richardson Scale Co.

## SCREENS.

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Ersham, J. B., & Sons Mfg. Co.  
Johnson & Chapman Co.  
Power & Mining Mch. Co.  
Sackett Screen & Chute Co., H. B.

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## Red, Brown, Buff and Black

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Chattanooga, Tennessee.

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## TWENTY LONG YEARS

of time and weather tried out Ricketson's  
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for Mortar, Brick, Cement, Stone, etc., and proved it to be  
absolutely permanent. Red, Brown, Buff, Purple and Black.

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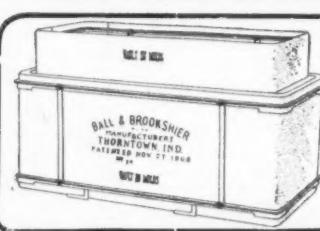
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CLINTON, N. Y.  
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**BRICK AND MORTAR COLORING**

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Let us tell you about Side-Walk Black.

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From Simpson Mold No. 66  
Height 18½ in.  
6 in. Square at Base

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Eight Dollars**

If you have no copy of our Concrete Porch Book, showing our great line of molds for ornamental work, send for it. If you are a block or brick maker, contractor or cement worker send your business card or letter-head and we will send the book free, otherwise send 10 cents.

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In every state, there is a large field for concrete tile. It can be sold to the farmers for draining their lands. Engineers are specifying concrete tile on sewer and drainage work. It is DURABLE. In Iowa, concrete tile, laid thirty years ago, is in use to-day, and is as sound as the day it was laid.

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They are made of the best material, by experienced workmen, of the best sheet steel, and reinforced wherever necessary. The outer casing opens directly away from the finished tile, hence no danger of injuring the tile in removing the casing. No heavy lifting, thus considerable time is saved. The clamps to lock the outside casing are simple and do the work rapidly and perfectly.

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Wooden pallets are sent with the "Hudson" Tile Molds. With a good, solid, level floor, no pallets are necessary, as the tile can be made on the floor and remain there until ready to be moved.

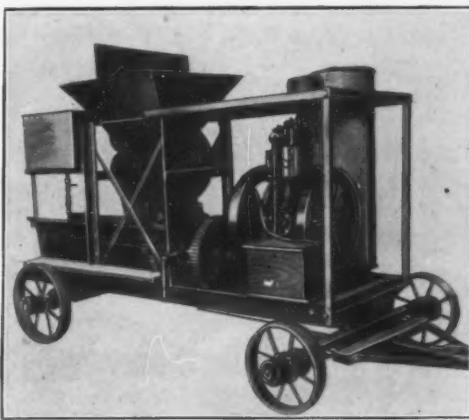
**The "Hudson" Sewer Pipe and Tile Molds are Unexcelled for Simplicity, Efficiency and Rapidity.**

They make Perfect tile at a minimum cost. They are durable. They will make you money. Give them a trial and be convinced.

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Combines the best features of all the others and has none of their faults. The ideal concrete mixer at last. Accurate in proportion. Light running and especially adapted for mixing concrete where it is necessary to use it in large quantities. Has a capacity of two hundred and fifty sacks of cement in ten hours making a one to four mix.



**The Best  
Continuous Mixer  
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This mixer is made mounted for portable work and on skids for stationary work.

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Lake City, Iowa**

Manufacturers of CONCRETE MIXERS, CEMENT BLOCK MACHINES, CEMENT DRAIN TILE MACHINES, HAND TILE MOLDS, POST MOLDS, ETC. Send for prices.

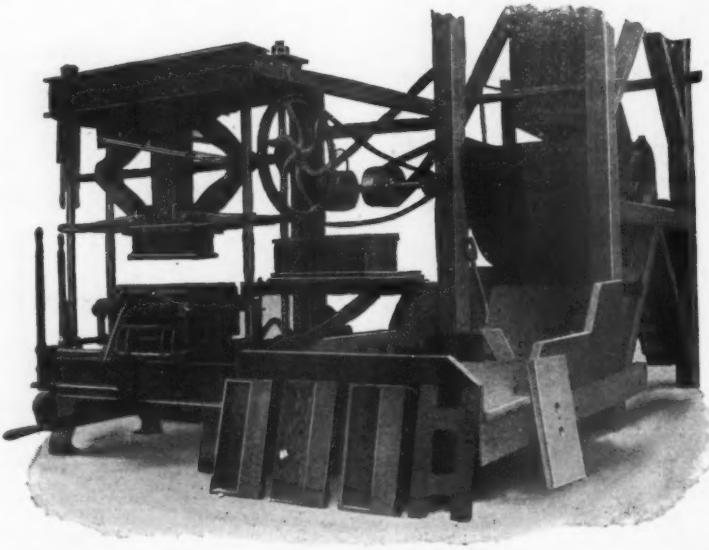
# PERFECTION AT LAST ATTAINED IN THE CONCRETE BLOCK INDUSTRY

THE PERFECTION POWER BLOCK MACHINE is the only Power Block Machine on the market, making a Hollow Concrete Building Block under Heavy Pressure and at Great Speed.

Machines have been in constant use since July 1st, 1905, with practically no expense for repairs.

The machine handles sand, gravel, crushed rock, slag and coloring materials perfectly.

All materials accurately measured, thoroughly mixed and uniformly pressed under 200,000 pounds pressure.



Makes 8, 9 and 12x8x24 inch blocks in five faces, and fractional and angle blocks.

Machine can be arranged to make Two Piece and Faced Blocks if desired.

All machines delivered, set up and put in operation to show a guaranteed capacity of 60 blocks (12x8x24 inch) per hour with 5 men.

Blocks perfectly cured in 24 hours in Vapor Curing Kilns of our own design.

Full details, catalog, testimonials, etc., sent upon request.

**THE PERFECTION BLOCK MACHINE CO.**  
KASOTA BUILDING :: MINNEAPOLIS, MINN.

## Anchor Concrete Block Machines

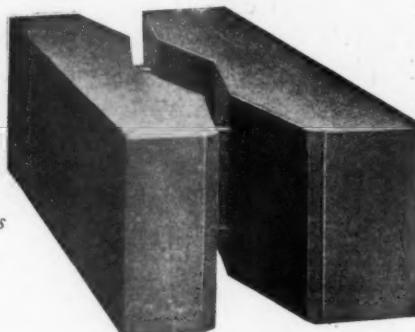


ANCHOR MACHINE IN POSITION TO RECEIVE MIXTURE

Anchor continuous air space blocks guaranteed frost and moisture proof.

Anchor blocks are bound together with firm  $\frac{1}{8}$  in. galvanized iron rods 8 in. long and turned one inch at each end.

*All machines sold direct to the trade, saving agents' commissions*



*Write for catalogue and special prices.*

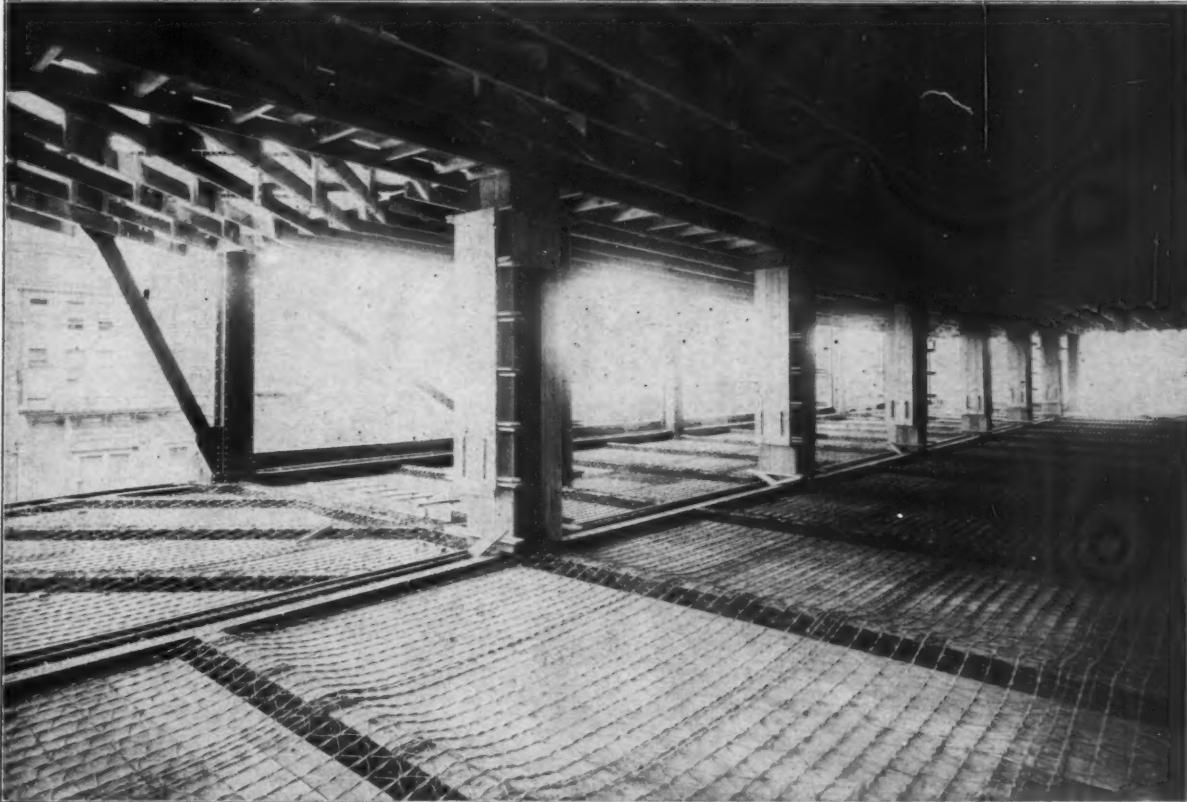
Standard Anchor Machines make blocks that lay in the wall 8 in. by 24 in., any width from 8 in. to 12 in.

Anchor Jr. Machines make blocks that lay in the wall 8 in. by 16 in. and any width from 8 in. to 12 in.

**Anchor Concrete Stone Company**  
ROCK RAPIDS, IA.

Tell 'em you saw it in ROCK PRODUCTS.

# Triangle Mesh Concrete Reinforcement

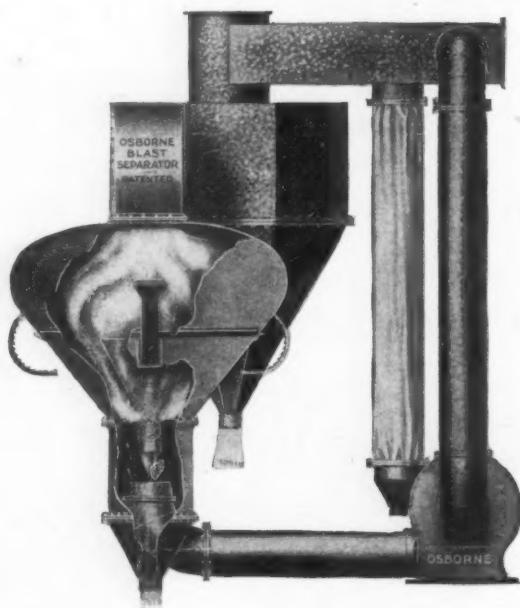


WHITE BLDG., SEATTLE, WASH. Built by Stone & Webster Eng. Co. Triangle Mesh Reinforcement Used.

Made by  
**American Steel & Wire Co.**  
CHICAGO, NEW YORK, DENVER, SAN FRANCISCO.

WRITE FOR ILLUSTRATED PAMPHLET.

## STOP LOSING MONEY In Your Grinding Room



You know it costs money to separate your material after it is ground, so why not use the best means of separation?

We can prove that the

### Osborne Pneumatic Blast Separator

IS THE BEST AND CHEAPEST MACHINE FOR YOU TO USE. It will give you larger capacities for less horse power than any other machine on the market. Will separate your material to 200 mesh fine.

Capacities, from  $3\frac{1}{2}$  to 10 tons per hour of finished product 95% 100 mesh fine.

STOPS ALL FLOATING DUST IN YOUR GRINDING ROOM.

Circular "A" Tells You More About It.

**Osborne Engineering - Manufacturing Company**  
141 BROADWAY, :: NEW YORK.

## "Brownhoist" Grab Bucket



### DON'T SHOVEL CRUSHED STONE BY HAND

If you have an ordinary derrick driven by a single drum engine you are equipped to operate our single line grab bucket. This bucket is simply hooked onto the crane hook as shown herewith.

Our bucket on the derrick shown in the picture handled as high as 600 tons of crushed stone in ten hours.

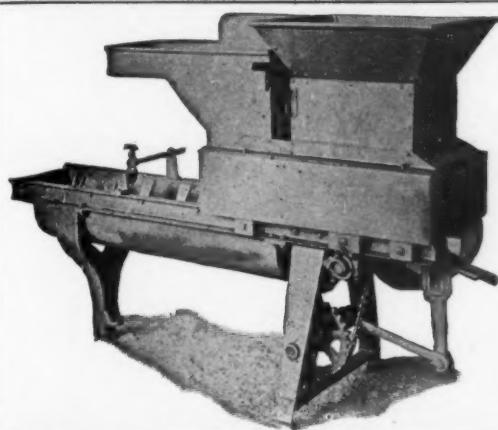
WE CAN INTEREST YOU. WRITE US.

**The Brown Hoisting Machinery Co.**

Main Office and Works, CLEVELAND, O.

OUR NEW BUCKET CATALOGUE SENT FREE TO INTERESTED PARTIES.

Branch Offices, NEW YORK and PITTSBURG



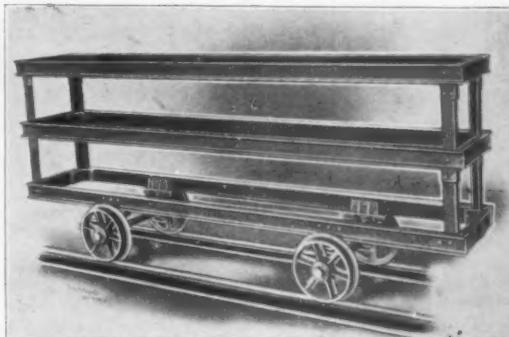
## "KENT" CONTINUOUS MIXER

"The Mixer that measures  
and Mixes"

"You fill the Hopper, the  
Mixer does the rest"

Simple, reliable, economical, durable  
and moderate in price

Write for Catalogue and Prices to  
**The Kent Machine Co.**  
306 N. Water St., Kent, O.



The "KENT" Block Cars, Transfer Cars, etc.

THE C. O. BARTLETT & SNOW CO., CLEVELAND, OHIO, U.S.A.  
MANUFACTURERS OF

### Crushers, Graders, Elevators Drop Forge Steel Chain Malleable and Steel Buckets

DRYERS—the largest assortment in the world.

GYPSUM MACHINERY, PLASTER MACHINERY,  
SELF-DUMPING CAR HAULS,  
SAND AND BRICK DRYERS AND CONVEYORS.

Our motto is

**"The Best and Always the Best."**

"The Talk of the Cement Shows."  
Our Block, Brick and Mixing Mchy.

### Systematic Concrete Mixer

Get  
Catalog "R"

28

Advantages

No Springs  
or Chains.

High  
Wheels.  
Low  
Hoppers.  
Horizontal  
Drive.

Cement Mchy Co.  
Jackson, Mich.



Flint Pebbles and Buhr Stone  
Linings.

French Buhr Mill Stones,  
Solids and Built.

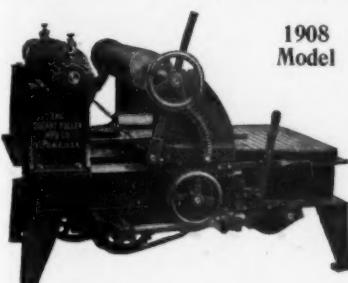
## J. M. Charles, Sole Agent.

59 Pearl St., NEW YORK, N. Y.

Bolting Cloths, Dufour Swiss  
Silk, Fine Wire Cloth.

Mixing and Sifting  
Machinery.

## The Shuart-Fuller Improved Fiber Machine



1908  
Model

Has an automatic, proportional, increasing feed, which keeps grade of fiber uniform from start to finish, and holds machine to highest possible rate of production for the grade of fiber and number of saws. Does not begin with fiber and end with dust, nor fall off in rate of production on each log, from 40 to 80 per cent as do the ordinary non-increasing feed machines. Works logs up to 24x24 inches. No royalty string attached to sale. Pay no attention to misrepresentations of our competitors, but write for descriptive circular and terms to

**The Shuart-Fuller Mfg. Co.**  
ELYRIA, OHIO

THE SHUART-FULLER CO., Elyria, Ohio.

Gentlemen:—We are just in receipt of advice from our New Mexico plant wherein they state that the Wood Fiber Machine recently shipped by you is doing all that we have asked of it and running very fine.

ST. LOUIS, June 17, 1907.  
ACME CEMENT PLASTER CO.  
By Jas. R. Dougan, Sec.

Tell 'em you saw it in ROCK PRODUCTS

## FARREL ORE AND ROCK

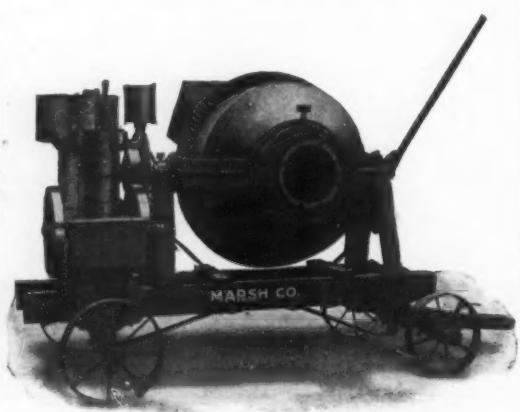
# CRUSHER

USED IN ALL PARTS OF THE WORLD—LARGE  
RECEIVING CAPACITY—SPECIALY DESIGNED  
AND CONSTRUCTED FOR HARDEST KIND OF WORK

COMPLETE CRUSHING PLANTS OUR SPECIALTY

• SEND FOR CATALOGUE •

**EARLE C. BACON, ENGINEER.**  
FARREL FOUNDRY & MACHINE CO. HAVEMEYER BUILDING, NEW YORK

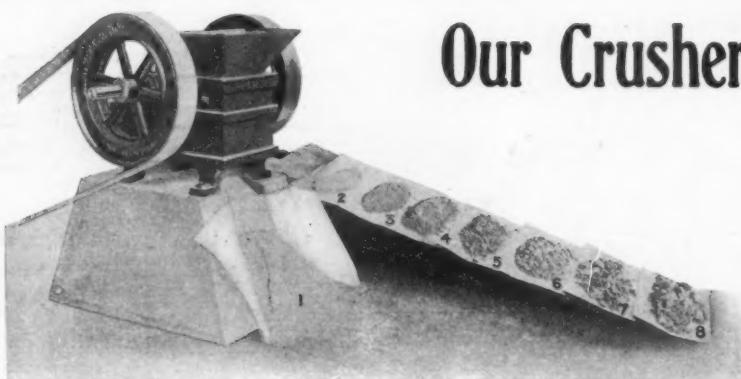


Furnished with any combination of power and mounting, chain or gear connection at option.

## Marsh-Dexter Mixer

We claim a lot for this machine. If our claims are true you want to know it. If you will write us we will tell you how to find out.

**Marsh Company**  
903 Old Colony Building  
**CHICAGO**



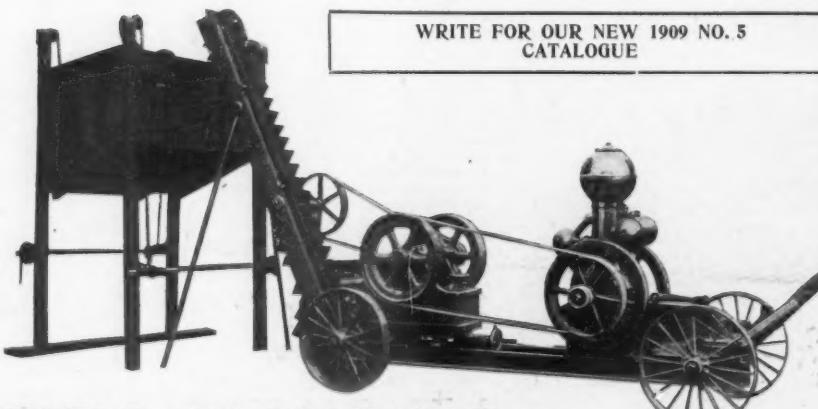
Style No. 1, 7x8 Jaw Opening, 4 Horse-power.

## Road Supervisors' and Contractors' Outfit

Our No. 2 Mounted Outfit, 12 foot steel 1 beam truck, one 6 horse-power gasoline engine, 14 foot elevator, arranged to fold back over machine. Complete weight of outfit, 7,500 lbs. Guaranteed to crush 40 tons, passing through  $2\frac{1}{2}$  inch ring in ten hours.

This illustration shows the exact product, numbered from 1 to 8, that our CRUSHERS produce. Would you not be interested in a crusher if we guarantee to produce from 10 to 20 tons in ten hours with this little No. 1 machine, from  $3\frac{1}{2}$  to 4 inch material at one operation? We have sold over 200 of these machines in the past year, and they are doing just this very kind of work. We manufacture twenty different-sized crushers.

WRITE FOR OUR NEW 1909 NO. 5 CATALOGUE



**EUREKA STONE & ORE CRUSHER COMPANY, Box 591, Cedar Rapids, Iowa**



## AUSTIN GYRATORY CRUSHER

The World's Leading Rock and Ore Breaker

The Only Automatically Lubricated Gyratory Crusher

8 Sizes—Capacities 40 to 2000 Tons.

Simple Construction (Saving Repairs)  
Economically Operated (Saving Expense)

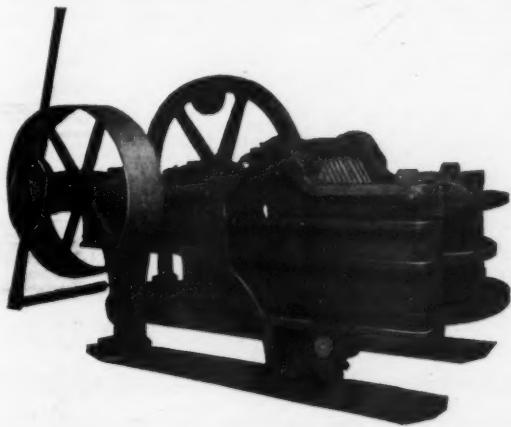
Correct Design (Saving Power)  
Result: EFFECTIVE, DURABLE, AND MAXIMUM CAPACITY.

Plans and Specifications Submitted for Any Size Plant.

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**AUSTIN MANUFACTURING CO., Chicago**

New York Office, Park Row Building



## CRUSHERS

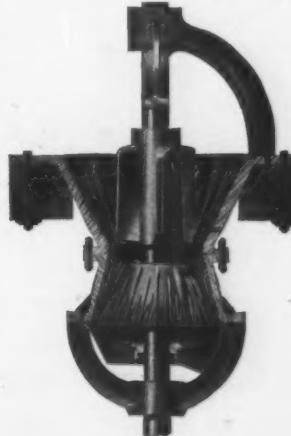
for soft rocks, burnt lime, etc.

### GYPSUM MACHINERY

We design modern Plaster Mills and make all necessary Machinery, including Kettles, Nippers, Crackers, Buhrs, Screens, Elevators, Shafting, etc.

**SPECIAL CRUSHER-GRINDERS FOR LIME HYDRATORS**

**BUTTERWORTH & LOWE**  
17 Huron Street, GRAND RAPIDS, MICH.



### "The Svenson is Easily the Simplest and Fastest Mixer Ever Built"

Quit wasting money and making bad concrete with that "batch" machine. Don't fuss and lose time with complicated mixers. Let us tell you about this simple, strong machine.

### The Svenson Concrete Mixer

Has only five moving parts, all on one shaft. It keeps going and it keeps the men going.

We want to tell you our ideas on proper mixing, for the "Svenson" mixes dry, then wet—the only scientific way. And it proportions the mix positively, just the way you set it.

Send for Catalogue.

**Svenson-Shuman Machine Co.,**  
602 Bessemer Bldg., PITTSBURGH, PA.



## A \$500 MIXER FOR \$350.

### The Besser Improved Paddle Mixer

Measures exactly any and all kinds of material, either wet or dry, and mixes them perfectly. It has no gears, springs or cogs, and but one sprocket chain. Proportions and capacities are changed outside of the hoppers, and instantly. Does away with expensive delays and breakdowns. Pivot bearings. Steel construction. Unbreakable. Bearings removed from dirt. The most simple and dependable proportioning mixer on the market. Sold on trial. With various equipment. For all kinds of work at PRICES FROM \$175.00 UP.

We make the most COMPLETE LINE OF CONCRETE MACHINERY, and call your special attention to our POWER AND HAND CEMENT DRAIN AND SEWER TILE MACHINES. They are money makers.

Also Besser Block and Brick Machines, Fence Post and Ornamental Molds, Monolithic Sewer and Culvert Forms. The Besser \$95.00 Hand Batch Mixer should be in every small block plant. Send for free literature and 25 cents for large Catalogue and Instruction Book.



**THE BESSER MANUFACTURING CO., 110 Ninth St., Alpena, Mich.**

Tell 'em you saw it in ROCK PRODUCTS.

# THE KENT PULVERIZER

Takes one inch feed. Grinds to any fineness from 10 to 200 mesh.

## GRINDS PER HOUR WITH LESS THAN 25 H. P.

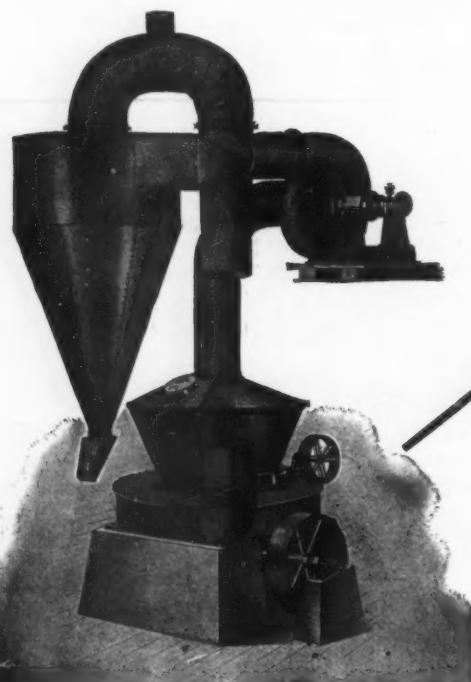
CEMENT CLINKER,	40 bbls. to 98%	20 Mesh.
CEMENT CLINKER,	12 " " 96%	100 "
LIMESTONE,	2½ tons to 98%	200 "
LIME,	4 " " "	100 "
ROSENDALE CEMENT,	43 bbls. " 90%	50 "
QUARTZ TRAP-ROCK,	4 tons " "	40 "

You can easily figure from this what a Kent Mill would save for you.

W. J. BELL, Esq., Supt.  
NEWAYGO PORTLAND CEMENT CO.,  
Newaygo, Mich.  
Says:—Four KENT MILLS are driven by one 75 H. P. motor

For Catalogs and Information, Address

**KENT MILL CO.**  
LONDON W. C.  
31 High Holborn      170 Broadway, NEW YORK      BERLIN N. W. 6  
Schiffbauerdamm 29



**65%**  
SAVING

IN COST OF

**GRINDING COAL**

AT A

**CEMENT PLANT**

A Cement Manufacturer ground in 1907—Thirteen Thousand Tons Coal

**Using the Raymond Roller Mill with Air Separation**

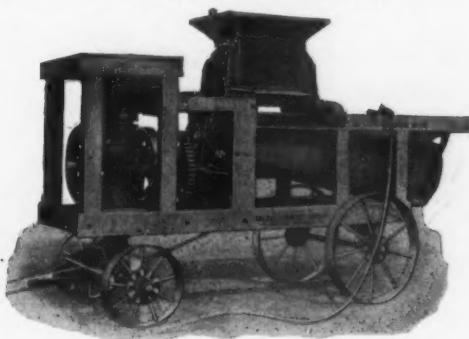
The cost to him for grinding was per ton—Twelve and One Half Cents.  
The cost to him for grinding was per ton—Thirty Three and Six-tenths Cents.

We cite these figures as simply typical of the extremely satisfactory results secured by our customers with the Raymond System, in grinding and handling all kinds of materials, from coal to dry paint colors, from limestone to alfalfa. To the manufacturer who grinds any material whatsoever, we say—"You are probably losing profits if you are not using the Raymond System of Grinding and Separating." We are always ready to "show you."

**Raymond Brothers Impact Pulverizer Co. 141 Laflin St., CHICAGO**

## FIFTY-EIGHT Coltrin Concrete Mixers

In operation in Minneapolis



CITY OF MINNEAPOLIS  
ENGINEER'S DEPARTMENT, CITY HALL

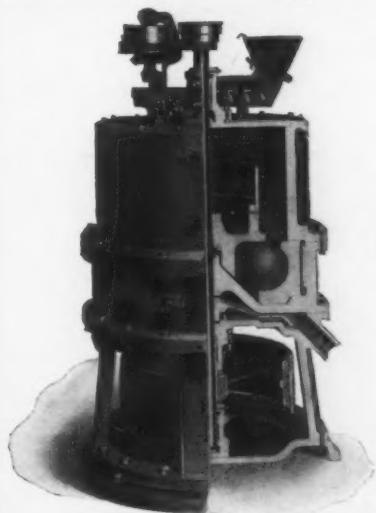
Dear Sir:— Minneapolis, Minn., March 1, 1909  
In 1908 we purchased two Coltrin Mixers from you, using the same in the construction of our artificial curb and gutter, mixing sand and cement.  
They have given very good service and we have found them to be very satisfactory as well as economical, making quite a saving over hand mixing.

Yours truly,  
ELLIS R. DULTON,  
ASST. CITY ENGINEER.

LET US SHIP A COLTRIN MIXER TO YOU ON APPROVAL  
P. B. Miles' Latest Block Machine, THE OLIVER AUTOMATIC  
and a full line of concrete machinery. Write for Catalogs

**N. J. MOREHOUSE**  
Waterloo, Iowa

## The Fuller-Lehigh Pulverizer Mill



Cement Companies equipped with Fuller Mills advertise the fact that the consumer gets 38 pounds more of the IMPALPABLE POWDER or REAL CEMENT in every barrel of cement produced by The Fuller Mill than by any other

### Produces Commercially

Cement having a higher percentage of Impalpable Powder than can be obtained by any other mill. Tests show that the tensile strength of a one-fourth mortar made with cement pulverized by the Fuller Mill is higher than the tensile strength of a one-third mortar made with cement pulverized to the fineness required by the Standard Specifications.

### Lehigh Car, Wheel & Axle Works

CATASAUQUA, PA.

New York, N. Y.

Hamburg, Germany

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## RAW MATERIAL GRINDERS

### New Williams Universal

FOR TUBE MILL FEED

800 BARRELS 22 HOURS  
95 PER CENT THROUGH 20 MESH  
HORSE POWER 40 TO 50

WE ALSO GRIND  
GYPSUM, LIME, COAL AND SHALE



### Vulcanite Grinder

FOR ROLLER MILL FEED  
TAKES MATERIAL FROM  
GYRATORY, DIRECT

CAPACITY 20 TONS HOUR  
FINENESS  $\frac{1}{2}$  IN.,  $\frac{1}{4}$  IN. AND  $\frac{1}{8}$  IN.  
HORSE POWER 40 TO 45  
1,300 MILLS NOW IN USE



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WORKS:  
ST. LOUIS, MO.

The

SALES OFFICE:  
OLD COLONY BLDG.  
CHICAGO

### Williams Pat. Crusher & Pulverizer Co.

San Francisco Offices: 428 Monadnock Building

TRADE **TISCO** MARK

Hadfield Taylor Manganese  
and other

**Superior  
Steel Castings**

To Resist  
WEAR, TEAR, BREAKAGE

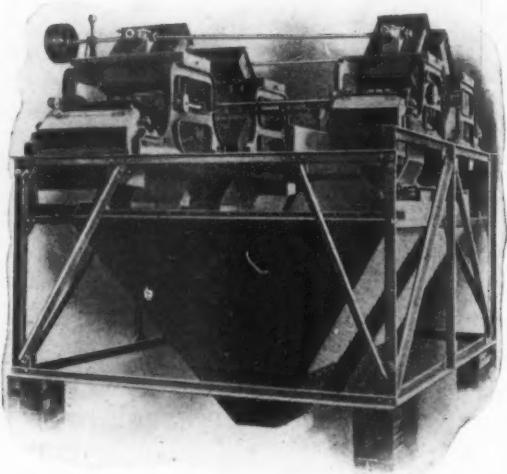
Tell Us Your Trouble.

Maybe We Can Help You!

**TAYLOR IRON & STEEL CO.**  
High Bridge, N. J.

**ACCURACY COUNTS**

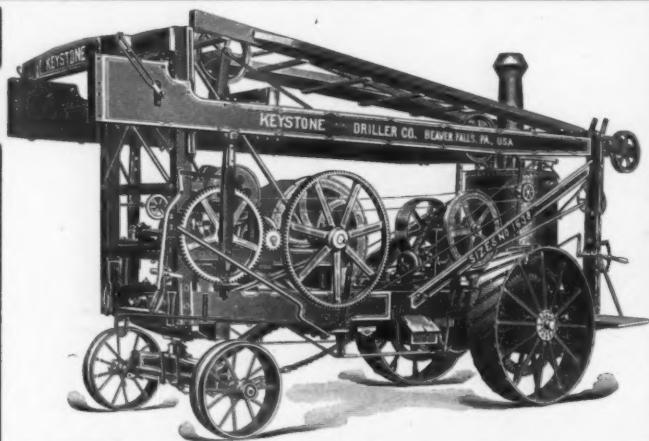
An assured exact mixture in accordance with the formula of the chemist of the works is automatically secured; no risk of a spoiled mixture on account of unreliable hand weighing when using the

**Richardson Automatic Weigher**

Two (or more) scales that work as one, discharging simultaneously by our new patent electric gear.  
Any kind of material handled with equal facility.  
Many successful installations.  
Scales to weigh finished cement to the stock bins; also to weigh cement into bags, at the rate of five to six bags per minute.

**RICHARDSON SCALE CO.**

3 Park Row, NEW YORK      122 Monroe Street, CHICAGO

**KEYSTONE CHURN DRILLS  
FOR HEAVY BLAST HOLES**

IN CEMENT and STONE QUARRIES, where large and deep blast holes can be used to advantage, these machines form the cheapest and quickest means of sinking 6 inch holes.

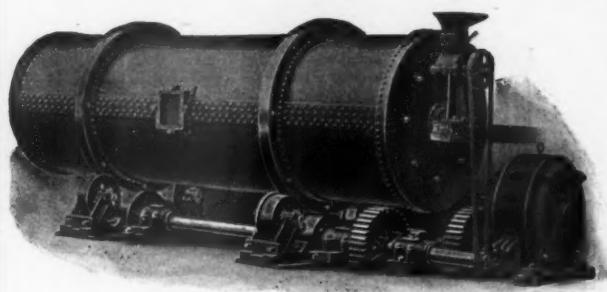
Penetrate any formations, any depth, 30 or 300 feet. Self-moving or portable, if desired.

Ask for Catalog No. 4.

**KEYSTONE TRACTION DRILL CO.**  
Monadnock Bldg., BEAVER FALLS, PA.,  
CHICAGO. 170 Broadway, NEW YORK. CARTHAGE,  
MISSOURI.

**ALSING TUBE MILLS**

AT THE FOUNDATION  
**THE BEST for SAND LIME BRICK**

**Ores, Minerals, Chemicals, Cement, Etc.**

A saving in power of 30% guaranteed. Almost same power to start as to operate. Continuous feed and discharge.

Produces 75% to 90% Perfect Face Brick. HALF A MILLION White Silica in new Philadelphia Opera House.

**THE SECRET OF SUCCESS.**

The two Model and Most Modern Plants (The Penbry Brick Co., Penbryn, N. J.; Cranford Paving Co., Washington, D. C.) USE OUR Tube MILL and Crushing Device.

**J. R. Alsing Engineering Co.**

Incorporated 1885      R. F. ABBE, Pres't      Founded 1869

136 Liberty Street, New York



95-C IN SANDUSKY PORTLAND CEMENT COMPANY'S QUARRY.

**Bucyrus Shovels Are Loading Crushed Stone and Digging Blasted or Unblasted Cement Rock in the Leading Quarries in the United States.**

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Branch Offices:  
NEW YORK  
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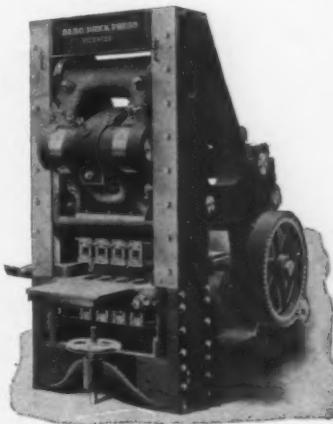
Main Office & Works:  
South Milwaukee, Wis.

The "Berg Press" is the Highest Development in the Art of Brick Making Machinery, so Pronounced by the United States Government

Highest Grade  
**BRICK MACHINERY**  
 and Equipment  
 FOR  
 SAND-LIME, SAND-CEMENT  
 FIRE-BRICK, CLAY and SHALE

Each system we guarantee are unequaled and further advanced than any others

**Cement Machinery  
 Mining Machinery  
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**The Berg Machinery Manufacturing Co., Ltd.**  
 Toronto, Ont., Canada

## Imitation Is the Sincerest Flattery

Since it has been proved that our Patented Method for mixing sand and lime for the manufacture of brick or stone, commonly known and named by us the

### **"Division Method"**

is a success, and the only way of producing a high grade brick or stone of real merit at a low cost, others are offering to install a

### **"Division Method" or a "Division System" AS SOME CALL IT**

Although we fully appreciate the high compliment paid us by such attempts to imitate our process

### **WE DESIRE TO WARN INVESTORS**

that such imitation or "just as good" methods are failures, because "they do not deliver the goods". Moreover, any successful imitation would be an infringement on our process which is fully covered and protected by Letters Patent in the United States and all foreign countries. We will protect our patents and prosecute infringements.

We erect and equip up-to-date factories completely, furnishing machinery of special design for our use and operated under our Patented

### **"Division Method"**

producing the highest grade brick or stone possible to make at less cost than can be produced by any other system or machinery.

*Correspondence Solicited.*

## **International Sand Lime Brick & Machinery Company**

Engineers and Contractors for Silicate Brick Factories

**90 West St., - - - - - New York, N. Y.**

# PARKER Steel Corner BEAD

Is being used by all leading Plaster Contractors. It has become so widely known for the following reasons—

- BECAUSE it furnishes the strongest protection to the plaster corner; gives just the right rounding and is a guide for the plasterer in making a plumb, straight angle.
- BECAUSE with its peculiar shape the plaster is not thin and feather-edged where it joins the metal, and so does not crack and flake off.
- BECAUSE the steel is perfectly protected from rusting by a heavy coating of zinc, put on by the Hot Galvanizing Process. The electro-galvanized metal corner (which you may get unless "Parker" is specified) does not withstand the chemical action of hard plaster.
- BECAUSE it saves the cost of wood trim and constant repairing and repainting of it.

MANUFACTURED BY

**Sharon Steel Hoop Company,**

CHICAGO OFFICE: Commercial National Bank Bldg. N. Y. OFFICE: Fuller Bros. & Co., 139 Greenwich St.

GET THE BEST

## **Finest Line of Gypsum Machinery**

MADE

**KETTLE CRUSHER NIPPERS**

ASK FOR CATALOG OF

**MOGUL NIPPERS. OPEN DOOR POT CRUSHERS**

Best Mills in the United States Have Them

**McDONNELL BOILER & IRON WORKS, Des Moines, Iowa, U. S. A.**

"Formerly Des Moines Mfg. & Supply Co."

**We make twenty other kinds of Wheelbarrows**



No. 5  
Ohio Steel Tubular Barrow



No. 150  
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No. 106  
Ideal Contractors Barrow

**Write for circular  
and our prices.**

**The Ohio Steel Wheelbarrow Co.**  
25-31 South St. Clair Street, - - - TOLEDO, OHIO, U. S. A.

**Does Quality Appeal to You?  
Does Prompt Service Appeal to You?  
Does Reliability Appeal to You?**

Then Buy

**Your Stucco and  
Wall Plasters of  
The  
AMERICAN GYPSUM CO.  
PORT CLINTON, OHIO**

**Quality**

**Strength**

**Reliability**

**T**HE URSCHEL-BATES VALVE BAG CO.  
**H**as made paper bags for nearly  
**E**very discriminating user.  
  
**U** have no idea of the tricks  
**R**esorted to by people endeavoring to  
**S**how that the Valve Bag  
**C**an't be used successfully.  
**H**ave you ever known a new  
**E**nterprise not to get some knocks?  
**L**ife would indeed be too easy if one could  
**B**e sure of capturing everything in sight  
**A**t the outset of his career.  
**T**he Valve Bag is practical and  
**E**conomic. Everyone now using them  
**S**ays so and wouldn't do without them.  
  
**V**arious Lime and Cement plants  
**A**re filling hundreds of thousands of them.  
**L**ike falling off a log—so easy.  
**V**astly different from the old style bag and  
**E**ver so much more convenient in filling.  
  
**B**ags are not tied and you save money, for  
**A** larger output, at less labor, is obtained.  
**C**ee! If you could only see 'em work.  
  
**C**an you afford to pay more for packing than  
**O**thers in your line are paying? Economize.

**THE URSCHEL-BATES VALVE BAG CO.**  
Toledo, Ohio

**Stucco  
Retarder**

**Strong  
Uniform  
Fine Ground**

**RETARDER**

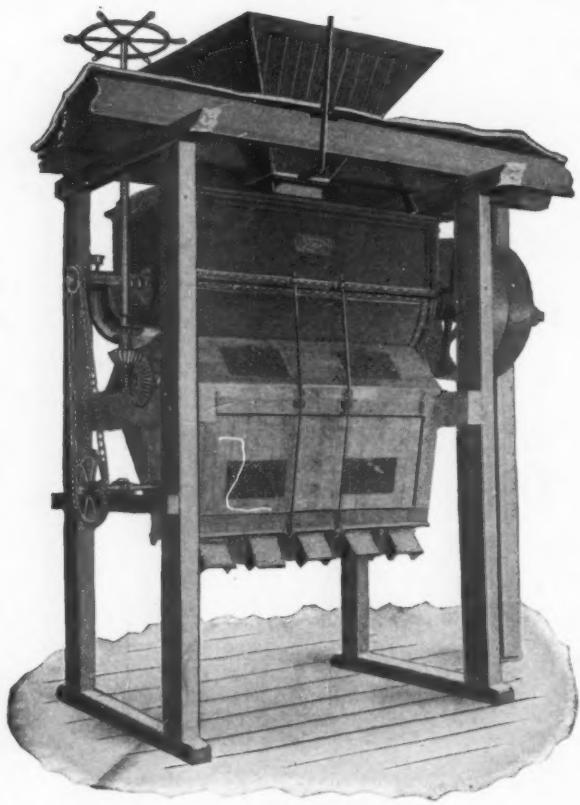
We are the oldest Retarder firm  
in the United States, and above  
is our motto. New fire-proof  
plant and prompt service.

**FREE SAMPLE ON REQUEST**

**Chemical Stucco Retarder Co.**

**WEBSTER CITY, IOWA.**

**INCORPORATED 1895**



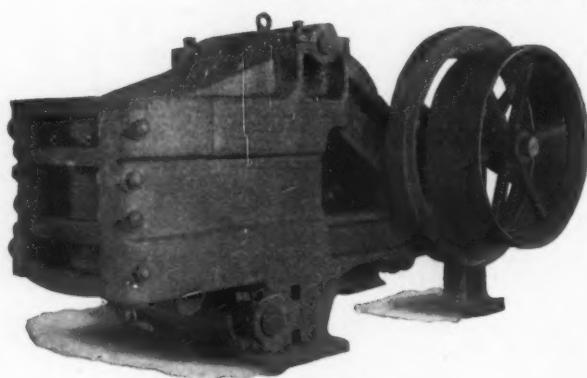
# ENTERPRISE PLASTER MIXER

NOISELESS,  
DURABLE and EFFICIENT.

For Mixing Hair Fibre, Wood Fibre and  
Retarder with Dry Plastering  
Materials.

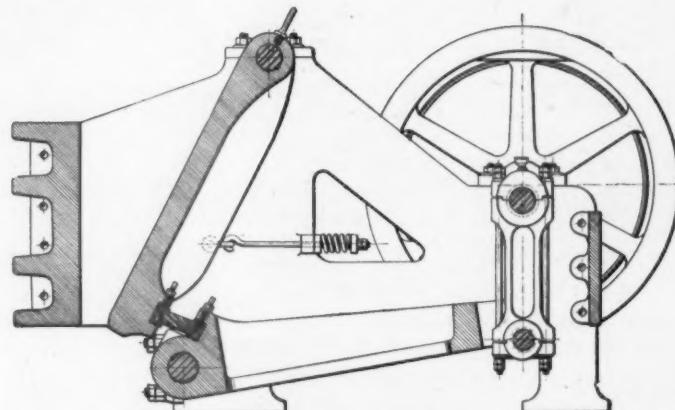
## Calcining Kettles

Jaw and Rotary Crushers for Gypsum, Reels,  
Vibratory Screens, Hair Pickers and Trans-  
mission for applying power.



EHRSAM NO. 4 JAW CRUSHER.

This machine will handle large chunks and reduce from 30 to 40 tons of Gypsum per hour to 2½-inch maximum or smaller if wanted.



NO. 4 JAW CRUSHER, SHOWING SECTIONAL VIEW OF NIPPER.  
The jaw opening at inlet is 18x28 inches.

**The J. B. Ehrsam & Sons Mfg. Co.,**  
BUILDERS OF  
**COMPLETE EQUIPMENTS FOR PLASTER MILLS**  
**Enterprise, Kansas**

**BUILDERS' SUPPLY  
DEALERS CAN**

# MAKE TWO PROFITS!



## Both Manufacture and Sell Rader Patented Plaster Board

If you are selling plaster boards you are making one profit. Why not manufacture them and make both manufacturers' and dealers' profits? With

### RADER'S PATENTED MOULDING TABLES

you can manufacture the best plaster boards on the market and at less cost than the largest manufacturers, enabling you to compete with any brand, both in quality and price.

### PLASTER BOARDS

are rapidly displacing all kinds of lath, being fire and vermin proof, lower in price, more rapid and economical in construction, stronger and more durable.

### RADER'S PATENTED PLASTER BOARDS

made only with Rader's Patented Moulding Tables are the most satisfactory now on the market. Cannot be broken as can others, thereby eliminating

all risk of loss by breakage in transportation or general rough handling. They have to be sawed in two. Each side of the board is adapted to different purposes thus having a double advantage over any other make. Three plants are now in operation to meet a growing demand.

**A COMPLETE PLANT CAN BE INSTALLED AT A SMALL COST**  
as the Rader apparatus is licensed at a very low price and only a very small space is required for its operation. The device makes boards from  $\frac{1}{4}$  to 1 inch in thickness.

**TERRITORY AND RIGHTS CAN BE LICENSED**  
with the exception of the New England and Middle Atlantic states which have already been secured by one of the largest plaster manufacturing companies in the East.

Write us for Samples and Further Information.

**GUSTAVE RADER CO.** 1105 Metropolitan Ave. **BROOKLYN, N. Y.**

# RETARDER Wood Fiber

**THE OHIO and BINNS RETARDER CO.**  
PORT CLINTON, OHIO

### Reliable Stucco Retarder=Strong=Uniform in Strength=

Duplicate power plant (electric and steam power) installed so as to preclude any possibility of shut down and consequent shut down of mixers who depend upon us for their supply of Retarder. We have a capacity large enough to supply every retarder user in the U. S. and Canada, and some to spare for Europe. Our mills are fireproof in every particular. Write us for prices and information.

**THE OHIO and BINNS RETARDER CO.**  
PORT CLINTON, OHIO



# It's Time to Dig!

Brother Dealer, the welcome Springtime is again at hand—"the winter of our discontent" is over—life and business are again budding into promise!

¶ The Building World is blossoming into activity—and it's time for you to **go out into the Garden of Opportunity and dig!**

¶ You already have your business "garden" more or less cultivated—but when it comes to **plastering materials**, you can't plant more fertile seeds for a Bumper Crop of Business and Profit than the

# U.S.G. Hard Plasters

*Made from Pure Rock Gypsum*

and **these Fast Selling Plaster Commodities:** Sackett Plaster Board, Gypsinite, Universal, U. S. G. Bond Plaster (for Concrete) U. S. G. Hollow Tile, Adamant (Cement for "Stucco Exteriors") Cementico, etc.

¶ **Extend your garden of Opportunities**—as thousands of other live dealers are doing! Plant the live seeds—**let us help you plant them and make them grow!**

¶ Enjoy the fruits of our Superior Quality brand, our Superior Service and our Cooperation!

¶ Let's get out and dig—you and we! A postal card inquiry for information, Literature or Quotations, will start it.

Address our nearest office:

## United States Gypsum Company

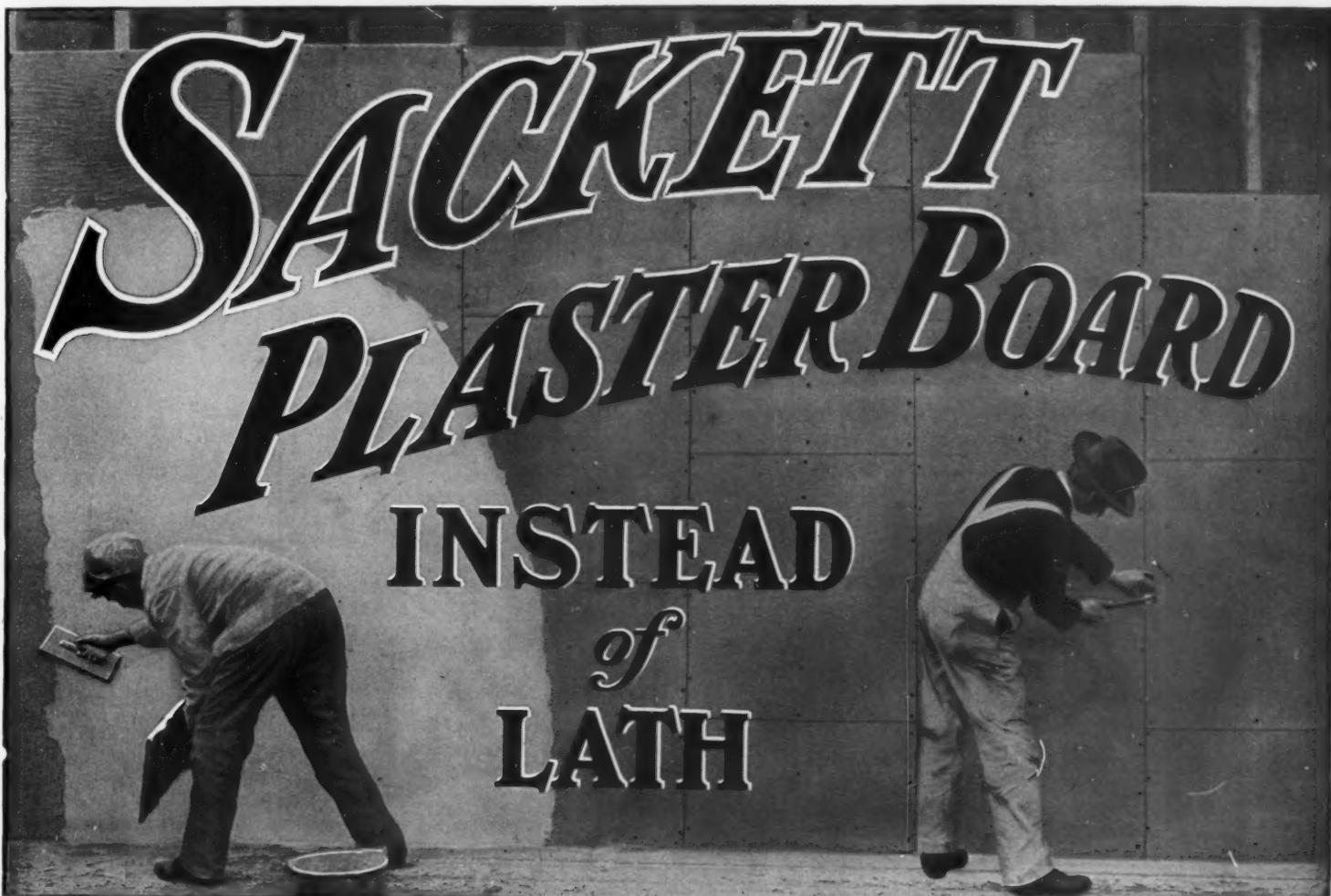
NEW YORK

CLEVELAND

CHICAGO

MINNEAPOLIS

SAN FRANCISCO



### FIREPROOF AND ECONOMICAL

SACKETT PLASTER BOARDS have been successfully used since 1891 in thousands of buildings of all classes, including small cottages, prominent hotels, costly residences, churches and theaters.

Walls and ceilings of Sackett Plaster Boards will be DRY AND READY IN HALF THE TIME required when lath is used, as less than half the quantity of water is needed.

Less moisture means less damage from warped and twisted trim and woodwork.

Their superior insulating qualities make warmer houses with less fuel. The first cost is no more than good work on wood lath, and less than on metal lath.

Booklet showing buildings all over the country where these boards have been successfully used with SAMPLES and name of nearest dealer furnished on application to any of the following General Distributors.

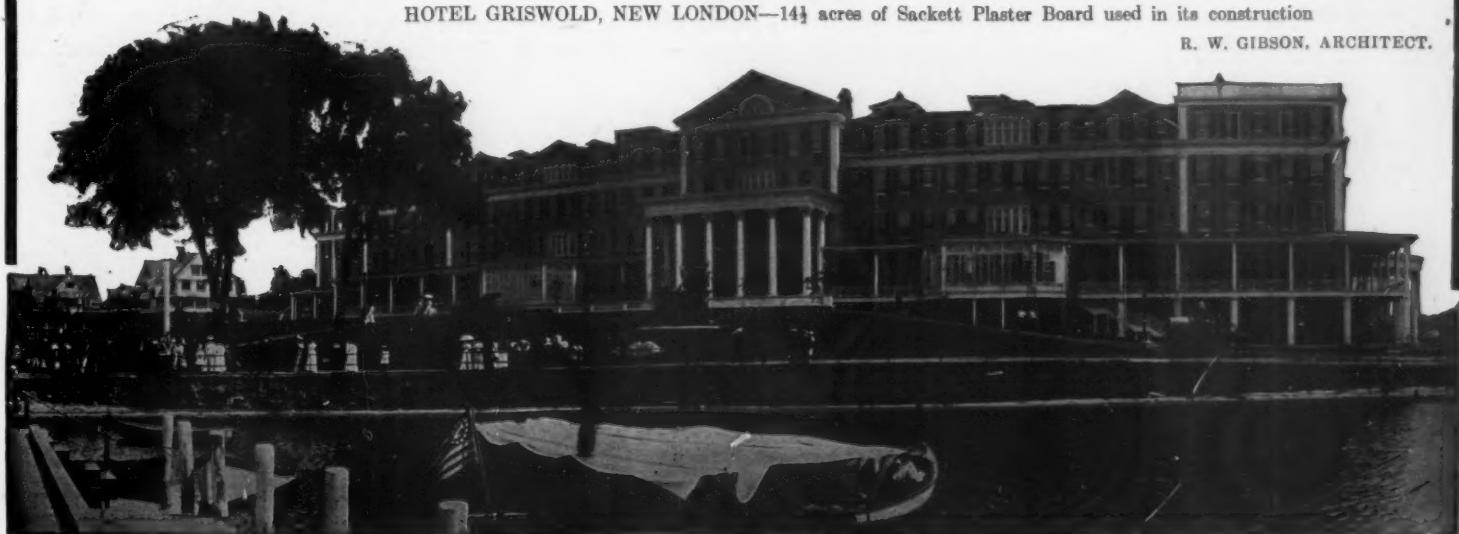
UNITED STATES GYPSUM CO. | CHICAGO CLEVELAND MINNEAPOLIS

GRAND RAPIDS PLASTER CO. | GRAND RAPIDS, MICH

SACKETT PLASTER BOARD CO. | 17 BATTERY PLACE, NEW YORK CITY

HOTEL GRISWOLD, NEW LONDON—14½ acres of Sackett Plaster Board used in its construction

R. W. GIBSON, ARCHITECT.



Tell 'em you saw it in ROCK PRODUCTS.

# NIAGARA GYPSUM CO.

MANUFACTURERS OF

## GYPSUM PRODUCTS

Our electrically equipped mines and mills are now in operation with a capacity of 300 tons per day, and we assure you of prompt service.



**GUARA  
IES & HILLS AT  
FIELD, N.Y.  
FALO, N.Y.** We Manufacture Stucco,  
Neat Cement Plaster, Ready  
Finish, Wood Fibre Plaster, Fin-  
ishing Plaster, Sanded Wall Plaster,  
Crushed Rock, Land Plaster.

## **SPECIAL MACHINERY AND FORMULAS**

## FOR THE MANUFACTURE OF

## **WOOD FIBRE PLASTER, FIRE PROOFING AND KINDRED PRODUCTS**

We furnish the latest improved FIBRE MACHINE, (fully patented) also FORMULAS, on a reasonable proposition. The strongest companies and oldest manufacturers are operating under my contracts.  
**WRITE FOR TERRITORY**

## The Ohio Fibre Machinery Co.

**J. W. VOGLESONG,  
GENERAL MANAGER**

# ELYRIA, OHIO

# **KING'S WINDSOR CEMENT FOR PLASTERING WALLS AND CEILINGS**

Elastic in its nature, can be applied with 25 per cent less labor and has 12½ per cent more covering capacity than any other similar material

**Buffalo Branch, CHAS. C. CALKINS, Manager**  
322 W. Genesee Street

**J.B. KING & CO., No. 1 Broadway, New York**

# Architects, Builders, Contractors

The motto of success in construction is: High grade material, and expert workmanship.  
Our brands produce successful walls.

## RELIANCE WOOD FIBER EMPIRE NEAT

## **EXCELSIOR SANDED EMPIRE FINISH COAT**

## Empire Gypsum Co.,

## Garbutt, N. Y.

Wides Mill Office, GARBUTT, N.Y.

Tell 'em you saw it in **ROCK PRODUCTS**



**BEST  
BROS.**  
Keene's  
Cement

FOR

**PLAIN AND  
ORNAMENTAL  
PLASTERING**

EQUAL IN QUALITY TO FOREIGN MAKES

MILLS AND QUARRIES:

MEDICINE LODGE, KANSAS  
SUN CITY, KANSAS

EASTERN OFFICE: . . . CLEVELAND, OHIO

**Plaster! Plaster!**

**Iowa Hard Plaster Co.**

HARD BY NAME. HARD BY NATURE.  
HARD TO BEAT. NOT HARD TO GET.Iowa Hard Plaster Co. FT. DODGE  
IOWA . . .

CROWING FOR

**PLYMOUTH H  
CEMENT  
AND  
WOOD FIBER  
PLASTER**

The Brand that's Made from Pure  
Gypsum Rock.

PLYMOUTH PLASTER  
MFG. BY  
PLYMOUTH GYPSUM CO.  
FT. DODGE, IOWA

WRITE US FOR PRICES AND  
ADVERTISING MATTER.

**Plymouth Gypsum Co.**  
Fort Dodge, Iowa

Tell 'em you saw it in ROCK PRODUCTS.

**The Improved Peerless'**  
One-Man Cement Brick Machine

Equipped with new tamping device, which tamps ten bricks in the machine at one operation, making 12,000 perfectly formed bricks in ten hours.



The superiority of the Peerless Brick Machine was demonstrated conclusively at all of the recent conventions.

It is the greatest invention in the industry. Simple, strong and durable. Combines all the advantages of every other machine at the smallest cost.

The most successful and most easily operated one-man brick machine ever made.

Write at once for particulars.

**Peerless Brick Machine Co.**  
15 NORTH SIXTH STREET MINNEAPOLIS, MINN.

# When You Buy a Block Machine

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## Get One With a Reputation Back of It

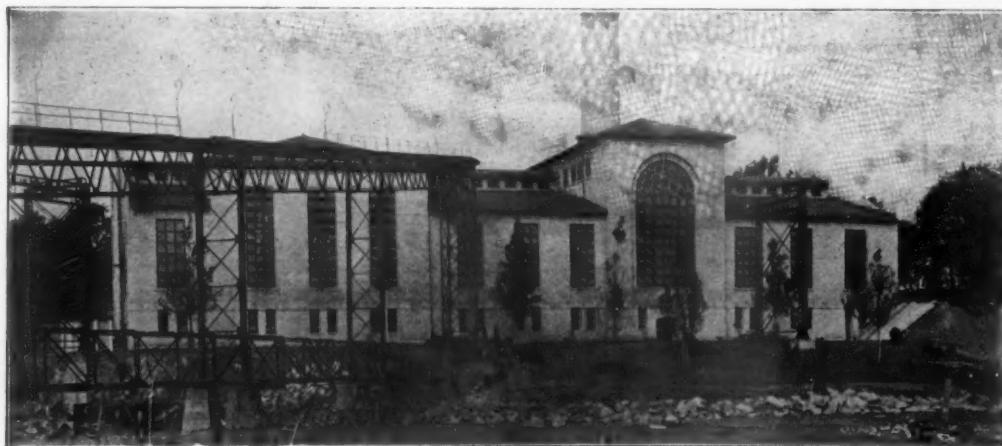
Get a machine that has **done** things, a machine endorsed and used by the big Engineers and Contractors

# Hercules Block Machines

meet all demands for heavy as well as light construction, Factories, Churches, Residences, Warehouses, etc. They have produced blocks for more large important buildings than all other machines put together. **THERE'S A REASON:**

THEY GO FURTHER. **Make sizes of Blocks other machines cannot make.** MAKE BETTER BLOCKS. LOOK AT THIS POWER HOUSE! Built by one of the largest and best known firms in the United States. WHY DID THEY SELECT THE HERCULES?—BECAUSE—they couldn't produce the sizes they wanted in the way they wanted on any other machine.

This building is but ONE sample of high class Hercules block construction, but it stands, like hundreds of others, a silent testimonial to HERCULES SUPREMACY.



Power House N. Y., N. H. & H. R. R. Co., Cos Cob, Conn.  
Built of Hercules Stone by Westinghouse, Church, Kerr & Co., Engineers, New York City.

This building is over 250 feet long, 112 feet wide and 50 feet high and required over 30,000 blocks. An idea as to the size of this building can be realized from the fact that it contains 12 large boilers and over 150 carloads of machinery.

THIS IS NOT REINFORCED CONSTRUCTION—IT IS CONCRETE 'BLOCK' CONSTRUCTION as it should be. IF YOU ARE GOING INTO THE BLOCK BUSINESS, or if YOU ARE ALREADY IN THE BUSINESS, it will pay you to investigate the HERCULES before you add additional equipment.

The output from one HERCULES exceeds the combined production of from TWO to FOUR machines of other makes.

If you are in doubt, our catalog will tell you and show you why. Send for copy today.

## Century Cement Machine Co.

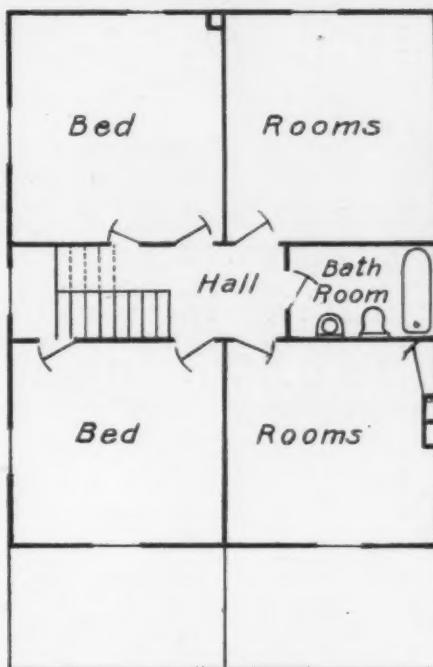
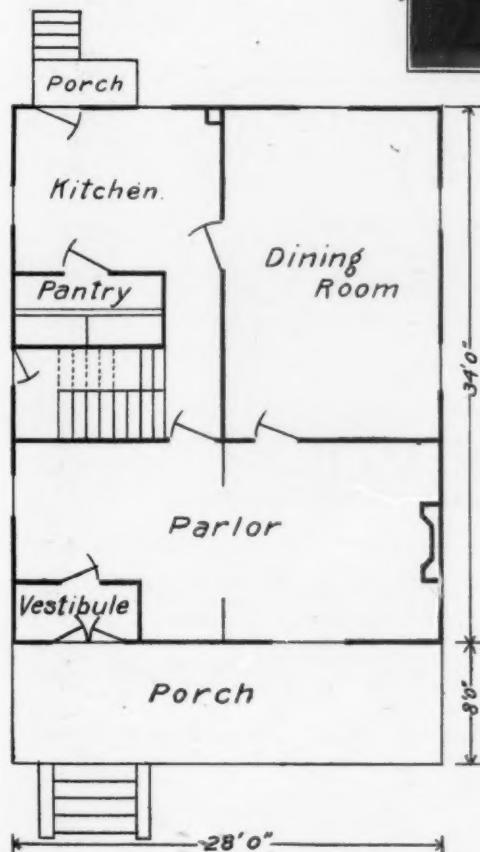
**288-298 St. Paul Street, Rochester, N. Y.**

# Low Cost Concrete Homes

The greatest obstacles to the use of concrete in small residence construction are: 1. The expense of form work and contractor's plant in reinforced concrete (monolithic) construction, and 2. The unsatisfactory appearance and poor waterproof qualities of concrete blocks made by the dry-tamp process. Both these obstacles have been overcome by

## The Pauly Concrete Hollow Tile.

Full particulars with regard to the equipment of a suitable factory with the necessary machinery for any location will be cheerfully given, and a conservative and profitable deal will be exhibited for prospective manufacturers of concrete structural tile upon request.



Frank M. Ray's  
Residence  
Youngstown, Ohio.

This residence is fireproof and waterproof. It was built in Youngstown, Ohio, fall of 1908, upon the following contract specifications:

Masonry work complete, including selling price of tile, concrete floor extending under entire basement and combination tile and reinforced concrete floors, etc.	950.00
Excavation of cellar and construction of walks, steps, etc., outside of building proper.	125.00
Lumber, hardwood, lumber finish for interior and glass (including built-in furniture and plate glass mirrors).	1,000.00
Carpenter work.	700.00
Slate roof and spouting.	200.00
Plumbing in kitchen, bathroom and basement.	250.00
Painting (exterior and interior).	125.00
Furnace and piping.	150.00
Total plastering (including material).	200.00
Plus 10% profit.	370.00
Total contract price.	\$4,070.00

The walks, driveway and steps, as well as the porch columns, are of concrete. It is sumptuously finished inside with hardwood, plate glass windows and doors with slate roof and six massive pieces of built-in furniture of elegant design, with plate mirrors, etc., all included in the figure named.

There is a good business opportunity in building homes of this type in any city. We furnish the entire machinery outfit upon the basis of a lease.

Send for booklet showing a large number of houses built with this material.

## CONCRETE STONE & SAND CO., Youngstown, O.

Tell 'em you saw it in ROCK PRODUCTS.

## BUILT FOR BUSINESS

### Champion Steel Rock Crushers



The Champion Portable Crushing Plant

Will make money for users because they will do more work at less cost for repairs than any other machines. Built in five sizes, from 75 to 300 tons daily capacity.

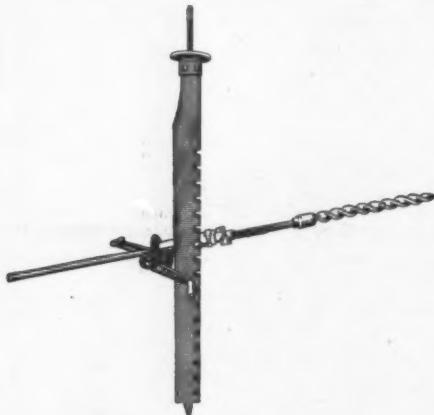
Complete Crushing Plants, including Elevators, Screens, Conveyors, Engines and Boilers, designed and installed.

Catalogue costs nothing. A large calendar free to those who mention this paper.

Address

**The Good Roads Machinery Co.**

KENNETT SQUARE, PA.



## HOWELL'S Celebrated Ball Bearing Heavy Geared Post Drills

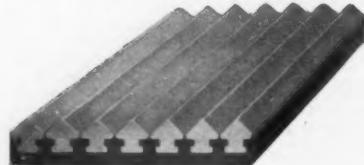
For boring anything that an Auger will penetrate.

*Awarded Gold Medal, St. Louis.*

We make 40 different styles machines run by Hand, Compressed Air and Electricity for boring Fire Clay, Coal, Rock, Rock Salt, Gypsum and Plaster Rock. Send to day for our handsomely Illustrated Catalogue.

**HOWELL MINING DRILL CO., PLYMOUTH, PA.. U. S. A.**  
(ESTABLISHED 1878.)

### A Tempered Steel Jaw Plate for Blake Type Crushers



Canda Tempered Steel Crusher Jaw Plate

Patented March 31, 1908

**C**The Canda Tempered Steel Jaw Plate for Blake Crushers is composed of Forged and Rolled Chrome Steel Bars, cast-welded and also mechanically interlocked into a backing of tough steel—and the wearing face is tempered to extreme hardness. We are equipped to supply both corrugated and smooth face plates for all sizes and makes of Blake Crushers.

**C**The Canda method of cast-welding forged and tempered steel bars into a mild and tough Steel Backing, is adapted also to the construction of Cone Heads for Gyratory Crushers, Segments for Corrugated Rolls, etc., etc.

**C**Our products in this line are sold with our special guarantee that they *will wear longer, give better satisfaction and, at our price, prove more economical than any others now on the market.*

—Send for Descriptive Pamphlet—

Represented by

J. F. Spellman, 202 Century Building, Denver, Colo.

George T. Bond, Easton, Pa.

George W. Myers, San Francisco, Cal.

**CHROME STEEL WORKS**  
CHROME, N.J., U.S.A.  
FORMERLY OF BROOKLYN, N.Y.

Tell 'em you saw it in **ROCK PRODUCTS**.

## The American Sandstone Brick Machinery Company,

SAGINAW, MICH.

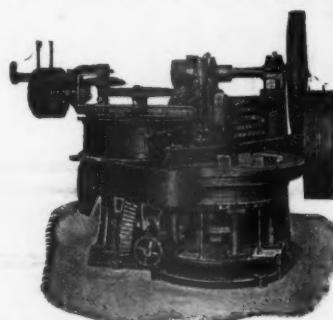
DON'T confuse our practical system with the so-called Scientific Systems. We confine ourselves to the manufacture of machinery for making brick from sand and lime; installing the complete plant starting and operating at our expense until at least 100,000 brick are made before asking for a settlement.

Our Plants are installed under the supervision of practical engineers who know how Sand-Lime Brick should be made, and can be made.

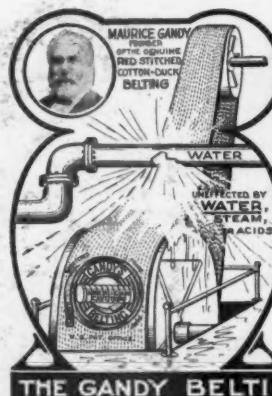
We have practical plants running successfully, to show to prospective investors.

### We are Not Scientists.

We produce results, because we are the oldest practical Sand-Lime engineering company doing business in the United States, and we defy contradiction. Incorporated April 1902.



Improved Saginaw Rotary Presses are now being built right or left hand, with extra table for making face and fancy brick, on which double pressure is exerted. Our patented brush does the work of one man, and keeps the plunger plates clean.



## THE GENUINE GANDY

Another Victory for GANDY RED STITCHED COTTON DUCK BELTING

On Nov. 18th, 1907, we secured a judgment against Weller Manufacturing Company for selling imitations of the Genuine Gandy.

And on Feb. 5th, 1909, the Circuit Court of the U. S. Western District of Pennsylvania, issued an injunction against C. A. Turner, Inc., from infringing upon our rights.

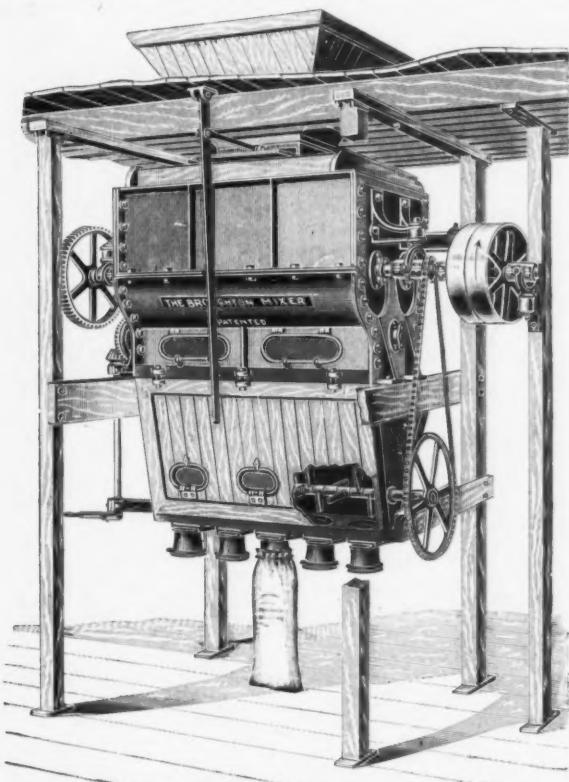
GANDY TRADE-MARKS are registered and will be protected, so don't be deceived. Every belt shows every ten feet "Genuine Gandy Belt."

We also make Gandy Belt Dressing and issue a free Booklet, "Experiences with Gandy."

THE GANDY BELTING CO. BALTIMORE, MD.







The most thorough and efficient  
Mixers of Plaster, Cement and  
Dry Materials. Send for Circular.

W. D. DUNNING, Water St., Syracuse, N. Y.

## Sand-Lime Brick Machinery

OUR Sand-Lime Brick Machinery is at least a little better than any other. We have testimonials to show it. We build it all in our own factory and are sure of its quality. We are the only firm doing this. We will design and equip your entire plant or will sell you parts of your equipment. Our catalog describing and illustrating our full line will be sent upon request.

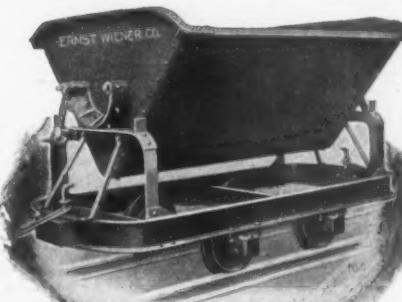
We also build a full line of machinery and appliances for making Clay Products, Cement and Pottery, Dryers and Dryer Apparatus.

Everything we sell we make. We therefore know its quality to be right.

**The American Clay  
Machinery Company**

WILLOUGHBY, OHIO, U. S. A.

## QUARRY AND CEMENT CARS



Double-Side Dump Car built for 18-54 cu. ft. capacity and 24" to 36" gauge.

Our cars **Stand Hard Service** because the material that is embodied in them is of the best quality. The construction is of the latest and most approved type.

Our cast iron wheels have an extra high flange and broad tread which has a deep chill.

Let us quote prices on your requirements.

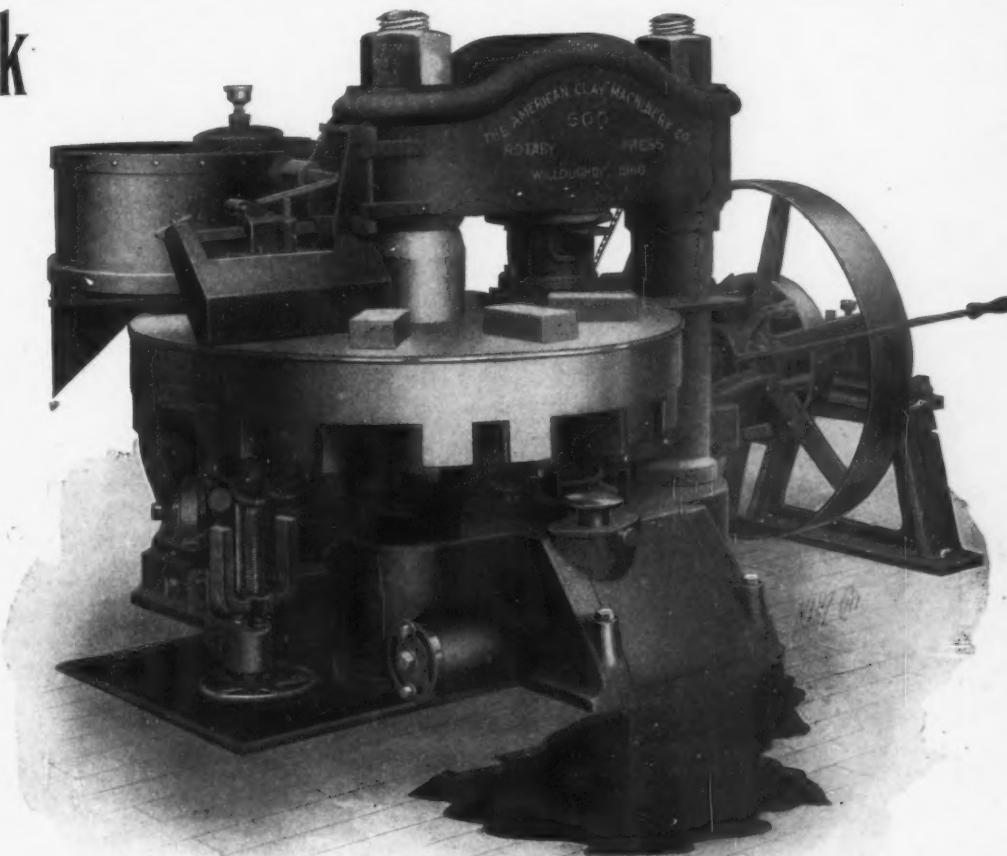
**Large Stock of Cars, Rails, Portable Track, Switches, Turntables, Etc.** Get our Catalog 17 and Stock List.

Agents for Industrial Locomotives of the Baldwin Locomotive Works.

**ERNST WIENER** RAILROAD SPECIALISTS FOR ALL INDUSTRIES.  
•COMPANY•

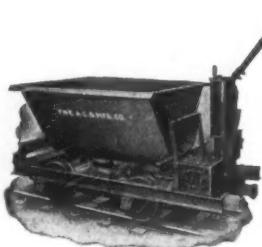
196 Fulton St., New York, N. Y.

Denver, Colo.—4017 14th St. Pittsburgh—Union Bk. Bldg. Boston—141 Milk St.  
Chicago—Monadnock Bldg. Bisbee, Ariz.—P. O. Box 597.  
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Tell 'em you saw it in ROCK PRODUCTS.

WE BUILD  
**CARS**  
FOR



QUARRIES,  
MINES,  
CEMENT  
WORKS  
AND  
GENERAL  
USE



No. 277  
Steel Mines and Quarry Car



No. 145-C  
Pressed Steel Top, Ball Bearing  
Turntable; Patented

SWITCHES,  
FROGS



RAIL,  
TURNTABLES

**THE ATLAS CAR & MFG. CO.**  
CLEVELAND, OHIO.

## 920 Foot Bridge Built in 23 Days

A Concrete Arch Bridge, 920 feet long and 50 feet wide, was built complete in 23 working days at McCall Ferry, Pa., to serve as a construction bridge for building a dam. The work was done in single shifts of 11 hours each and one arch was placed per day. The bridge carries four standard gauge tracks for 50-ton cars and one straddle track for a 12½ ton crane. It was built of GIANT PORTLAND CEMENT, manufactured by the

**American Cement Co.  
PHILADELPHIA**

## ARE YOU GOING TO BUILD?

No matter what kind of a structure you contemplate building, it will pay you to post yourself on the advantages of concrete construction made with

Daily  
Capacity

Over  
40,000 Barrels

**ATLAS  
PORTLAND CEMENT**



A concrete building means protection from fire, vermin and decay. It is cool in summer and warm in winter; requires no paint or repairs, yet permits of pleasing architectural effects and color schemes. In most cases you will find concrete construction the least expensive in the beginning and in all cases the cheapest in the end.

The success of concrete construction depends largely on the quality of the cement used. ATLAS is the highest grade of Portland Cement manufactured.

This Company makes but one quality—the same for everybody.

Tell your architect to specify ATLAS.—Ask your dealer for it. You will know it by the Trade-Mark.

Building Books FREE on request. As a guide to prospective builders we have published the following books which will be sent FREE on receipt of postage.  
Concrete Country Residences. Postage 25 cents.  
Concrete Cottages. Postage 1 cent.  
Concrete Construction about the Home and on the Farm. Postage 4 cents.  
Reinforced Concrete in Factory Construction. Postage 10 cents.

**THE ATLAS PORTLAND CEMENT COMPANY**  
DEPT. U 30 Broad St., New York

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